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The Foreign Exchange Market in the 1980s

The views of market participants

GROUP OF THIRTY
New York

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The Committee on the Foreign Exchange Market

Thomas S. Johnson (Chairman)	*Chemical Bank*
Geoffrey Bell	*Geoffrey Bell & Co.*
Richard Karl Goeltz	*Joseph E. Seagram & Sons*
Margaret L. Greene	*Federal Reserve Bank of New York*
Timothy A. Hultquist	*Morgan Stanley*
Roger M. Kubarych	*The Conference Board*
Eiichi Matsumoto	*Bank of Tokyo*
Scott E. Pardee	*Discount Corporation of New York*
George Soros	*Soros Fund*
Richard M. Levich	*New York University*

Compiled and Edited by Diederik Goedhuys

Published by

Group of Thirty©

1985

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The foreign exchange market in the 1980s

Introduction

The following study is based on replies to questionnaires prepared by the Group of Thirty's committee on the foreign exchange market and sent to banks and other institutions throughout the world. Forty large banks and fifteen securities houses, representing the most important participants in the foreign exchange market, responded to our study, as did fifty corporations with extensive foreign exchange operations. A special questionnaire was also developed for international fund managers, including mutual funds and the trust departments of banks, of which seventeen responded — making this, so far as we are aware, the first survey of fund managers' activities in the foreign exchange market. The care with which respondents answered the questions — with the replies being reviewed and approved often by the chief executive officer — reflected the importance they attached to the Group of Thirty's study. The survey was carried out in May-August 1985, before the meeting of the Group of Five developed countries at the Plaza Hotel, New York in mid-September and the subsequent more active intervention by central banks in the market.

Findings are summarized in the report: Part I gives a summary of the evidence and Part II supplies an analysis of the replies to the questionnaires. This effort follows an important study by the Group of Thirty on the same subject in 1979. Particularly impressive were the doubling in the estimated trading volumes in the major foreign exchange locations around the world since that time, the many new market entrants as important players, the wide familiarity with new and sophisticated products, and the techniques and policies that have been put in place to deal with increased perceived credit and price volatility risks.

The broad purpose of the study was to ascertain the views of market

participants on the functioning of the foreign exchange market and in particular the changes that have taken place in the last few years and those they anticipate in the future; it was not devoted in any direct way to evaluating the usefulness of the floating exchange rate regime. However, in commenting on the impact of exchange rate volatility on their institutions' willingness to take risks, on the development of their international investment and trading opportunities, and on whether and in what form new government intervention in the markets might be desirable, respondents had an opportunity to reveal their views on the present exchange system.

Respondents to the questionnaires seemed clearly to feel that exchange rate volatility, as well as the major realignments in exchange values over the recent past, have reflected differential economic conditions among nations and contrasting economic policies, and that it is those conditions and policies that would need to be managed differently, rather than the foreign exchange system, if a return to more stable short-term and long-term foreign exchange relationships is sought. Moreover, it seems clear that, in the view of the respondents, the aggregate volume of their international trade and cross-border investment has not been impeded by the recent period of volatility and realignment of foreign exchange values. The effect of longer-lasting exchange rate movements has been to change the structure, composition and direction of trade rather than its overall level. It seems logical to assume that volatility has added to the cost of doing business, but that was not possible to measure within the context of the study.

The overall picture presented is of a system that has expanded tremendously and works well, in the view of participants. There are some concerns, particularly relating to counterparty credit management, but they do not appear to have constrained seriously the international trade and investment activities of the respondents. One note of caution, in reading the responses, is that of necessity the study was limited to the largest banks, investment banking firms, corporations and investment managers. There may, therefore, have been effects relating to smaller participants in world trade and investment that would not have been revealed in this study.

We are extremely grateful for the cooperation of all those institutions that participated in the study. A note of thanks is also due to Mr. Diederik Goedhuys, who, as a Visiting Fellow at the Group on leave of absence from the South African Reserve Bank, was responsible for much of the analysis of the response, and the drafting of the report.

November 1, 1985

Thomas S. Johnson

Part I:
Summary of the evidence

Summary of the evidence

The present survey records rapid growth in the foreign exchange market and remarkable innovation in the instruments traded and the management techniques associated with them since the Group's earlier survey of the same subject published in 1980*. The 1980 report concluded that the market had well adapted to a regime of managed floating, that it had become global in scope and more competitive, and reasonably successful in determining medium-term trends. Some reduction in depth was noted in that earlier report, as well as in the availability of long-term forward contracts. The advent of floating exchange rates had brought somewhat higher costs of international trading and investing in its wake, but the effect was at that time judged to be small.

The salient findings of the new survey, conducted between May and August 1985, may be summarized as follows (a detailed analysis of the responses is contained in Part II):

Views of banks and securities houses

- The foreign exchange market doubled in size between 1979 and 1984, from an estimated $75 billion a day to $150 billion a day.
- A majority of banks perceive, on balance, a loss of depth and resilience in the market — the size of transactions that can be absorbed without affecting the rate is often smaller — and there is evidence of some decline in the competence of dealers.
- The counterparty risk — the possibility that a customer or trading partner may fail before the maturity date of a foreign exchange contract — is thought to have increased. More stringent credit evaluation has been introduced.
- Worldwide investment activity and trading in new financial instruments have been the main sources of the market's expansion, far outstripping world trade.

* "The foreign exchange markets under floating rates" (Group of Thirty, 1980).

- The new market participants come mainly from the ranks of securities and brokerage houses, international money funds and non-financial corporations. The market behavior of the new participants is described as more speculative and more inclined to taking large positions and big risks.
- The largest banks have captured market share from other banks. Their competitive edge is primarily in offering new products and in their willingness to deal in large amounts.
- Despite the innovations of recent years, the traditional forex "products" — spot and forward contracts — are expected to remain the market's staple diet.
- In the opinion of respondents, the volatility of exchange rates has worsened since 1979. This is attributed to increased attention to short-term economic and financial fluctuations, the market behavior of new participants, reliance on technical models, and, in the view of some, to futures and options trading.
- On the profitability of forex trading, volatility has had a mostly positive effect, particularly if the business has a strong customer base. Trading strategies have been adapted by running smaller positions.
- Those respondents who favor a greater commitment to stabilize exchange rates by governments and central banks — just 60 percent of the sample — say that this should be attempted mainly by harmonizing monetary and fiscal policies. Central bank intervention in the market can play a role if combined with such wider policy changes, not on its own.

Views of corporations

Allowance must be made for the widely differing operations, products and corporate structures of the participating enterprises and for the fact that the fifty respondents were all large international corporations.

- Corporations are conscious of having become more vulnerable to forex risks; many firms have responded to this by tighter centralized management of forex exposures, while others make each division or subsidiary responsible for its forex decisions. Managers are looking farther ahead when making forex decisions. Exposed cash flows up to twelve months ahead tend to be protected as the exposure arises.
- Recurring exchange rate realignments have altered the direction and composition, rather than the volume of respondents' international trade. Volatile rates have increased the cost of trading by a small margin and it has not always proved possible to raise prices accordingly.
- Exchange rate volatility has not generally reduced foreign direct

investment. The risk to investment is felt to be smaller than to trading operations. Where practicable, foreign investments tend to be hedged by indebtedness in the same currency.

- In selecting the currency of denomination of *borrowing*, the prime consideration is the asset and transaction exposure of the operation to be financed, followed by interest cost. Same-currency borrowing to finance foreign *current* assets is more common than the matching of foreign *fixed* assets with long-term debt, which is a more recent development.
- In the case of *sales*, the choice of the currency used in invoicing is subject to many different factors, but principally the demands of the market. The effect on accounting results is a very minor consideration.
- Corporations do not believe that they or their advisors can consistently predict exchange rate movements more accurately than "the market", though several say that they have experienced good results from their hedging and that their own assessment has more often been right than wrong. Also, some corporations are reported by both banks and securities houses to treat their foreign exchange activities as discrete profit centers.
- The replies relating to the functioning of the foreign exchange markets reveal a perception among businessmen that markets often carry rates to unrealistic levels; that volatility has increased in recent years, partly because of futures and options trading and the popularity of technical analysis; and that the forex markets, while much bigger than in the 1970s, have also lost something in becoming thinner and less resilient. In this respect, the business assessment is similar to that of the banks. Both groups are also doubtful of the value of official attempts to stabilize rates by intervention, unless used in conjunction wth wider policy changes.

These results are broadly in line with the findings of the Group's 1980 survey, which aimed to assess the impact of floating rates as such, and reflected the opinion of corporate treasurers that floating had not materially impeded international trade and investment. Then, as now, a number of respondents did note that the exchange risk imposed a higher required rate of return on foreign investment, which must have caused some otherwise feasible projects to be abandoned.

Overall, the present survey of the business impact of exchange rate behavior leaves the impression that increased volatility has not generally affected the level of economic activity, but has led to more financial transac-

tions of a protective nature and an approach to financing that is markedly conditioned by the foreign exchange risk.

Views of international fund managers

The following points emerge from this part of the survey:

- *Investment in foreign-currency assets* has increased significantly during the past five years for most funds.
- In the construction of *international portfolios*, views on the outlook for individual currencies certainly play a much larger part in investment decisions than they did previously. However, the prospect for individual security issues is still the primary consideration, followed by currency risk and political risk.
- Investment in the stocks and bonds of *developing countries* is undertaken selectively by most firms and preferably in securities listed on the respective local stock exchanges. Investors are attracted by above-average yields and sometimes even by the currency outlook.
- The *market risk* predominates over the *currency risk*, but the latter is receiving more management attention than it did two years ago. The currency risk is hedged on a selective basis, mostly by means of forward contracts and options. The time horizon for currency decisions rarely exceeds twelve months.
- The diversification drive by fund managers is thought to have contributed to exchange rate *volatility*. In this, the fund managers' views are in accord with those of the banks, which also attribute greater volatility in part to the activities of new players such as fund managers.
- This volatility has had a mostly negative effect on the overall return on investment. (This finding is in contrast to the positive effects of volatility on the profits of foreign exchange market makers, as reported in the banking survey.)
- Government attempts to *stabilize* exchange rates receive only lukewarm support among fund managers, who also have a low expectation of the success of such efforts.

Part II:
Survey of market opinion

1. Report on replies from banks and securities houses

This section of the report on the foreign exchange market and the effects of volatile rates is based on replies from 40 banks (out of 52 approached) and 15 securities houses (out of 24 approached) in 12 countries. Of these 55 institutions, 21 have head offices in the United States, 10 in the United Kingdom, 5 in Japan, 3 each in France, Germany and Switzerland, 2 each in Italy, Belgium, Austria and the Netherlands, and one each in South Africa and Hong Kong. Though of different sizes, all are large in their respective national markets.

Most of the questions asked of the banks and the securities houses, respectively, were identical. Significant differences in the questions or replies are noted in the text. Not all questions were answered by all firms, while some furnished additional information and background material.

Structure of the market

1. Please give us your impressions of the total volume of daily foreign exchange trading (spot and forward) in US dollars in the following centers.

Centers	Number of estimates received		Median* ($ billions)		Ranking	
	For 1979	For 1984	1979	1984	1979	1984
New York	23	25	17	35	2	2
Frankfurt	18	20	11	17	3	4
London	20	22	25	49	1	1
Zurich	20	23	10	20	4	3
Paris	18	20	4	5	5	6
Tokyo	20	23	2	8	7	5
Singapore	20	23	3	8	6	5
Hong Kong	20	22	3	8	6	5
Totals:			75	150		

* In view of the wide spread of the estimates, a simple average seemed inappropriate, and instead the *median* was adopted as the more realistic single-figure estimate.

London remains, in these estimates, the largest foreign exchange trading center by a wide margin. In the ranking of the first three, Zurich has overtaken Frankfurt. The Far East gained a share in the total market of 16% in 1984, compared with 11% in 1979. A census of US forex market turnover, conducted by the Federal Reserve Bank of New York in April 1983, established a daily turnover of $33.5 billion, which accords well with the present estimate of $35 billion for 1984. Overall, the market doubled between 1979 and 1984. This may be compared with an increase in world exports from $1,531.5 billion in 1979 to $1,661.8 billion in 1983 (latest available year), or by 8.5%. The huge upsurge in international capital flows undoubtedly accounted for the major portion of the increased turnover.

2. Of your firm's total foreign exchange trading volume, state the percentage of customer business and interbank business.

Customer business %		Interbank business %	
	Banks		
Median:	15	Median:	85
Range:	5-60	Range:	40-95
	Securities Houses		
Median:	20	Median:	80
Range:	3-80	Range:	20-97

The preponderance of interbank business is typical of the foreign exchange market. It provides the liquidity needed for executing large customer orders. Interbank business includes, of course, transactions to square customer business. Investment banks are not classified as banks in the United States, so that commercial banks report trading with them as customer business.

The difference between individual banks as regards the proportion of interbank dealing is also one of business orientation or strategy. Several banks in our sample look primarily to servicing their customers' forex requirements as the source of earnings from their forex operations, with interbank dealing as an outflow of this, while others place more emphasis on dealing profits.

3. Do you think the number of market makers/dealers has changed since 1979?

Category of market makers

A. Commercial banks:		%
	More	57
	Same	20
	Fewer	23
	Total	100
B. Investment banks and securities firms		%
	More	89
	Same	11
	Fewer	nil
	Total	100
C. Other:		%
	More	77
	Same	20
	Fewer	3
	Total	100

The growth in the numbers of participants is thought to have been mainly in categories other than commercial banks. Some respondents specify under "other": futures market participants, including private individuals.

One-half of the securities houses responding to the questionnaire started up their foreign exchange operations after 1970.

4. In your opinion, how much have the following institutions changed their forex activity since 1979?

Percent replying:	Less	0-up 25%	Up 25%-100%	Up more than 100%	Totals
Insurance companies	3	47	34	16	100%
Pension funds	nil	42	39	19	100%
International money funds	3	9	**52**	36	100%
Non-financial corporations	6	30	43	21	100%
Securities & brokerage houses	nil	6	36	**58**	100%
Commodities firms	nil	8	35	**47**	100%
Central banks	25	22	37	16	100%
Other official institutions	19	28	34	19	100%
Futures arbitrageurs	16	6	12	**66**	100%

In the respondents' opinion, all the participants listed did more business than before, as was to be expected from the overall doubling of the market (question 1), but it was the newer, non-traditional participants who advanced most, prime among them the securities and brokerage houses. The latter, in their replies, place more emphasis on the growth of the forex business of international money funds, and less on that of futures arbitrageurs.

The increased currency business of the securities houses is related to their worldwide investment activity, and includes options, futures and swaps (as regard currency and interest rate) of debt service obligations.

5. Is the trading strategy or market behavior of the new players significantly different from that of the traditional participants in the market (e.g., large commercial banks) and if so, in which ways?

— 94% of the commercial banks, and 57% of the securities houses answer: Yes

Different in which ways?

This question elicited a wide variety of responses describing the characteristics of the new participants' market behavior. Some went on to indicate the cause of the changed market environment.

The market behavior of the new participants is described as more speculative and more inclined to taking large positions and big risks. Compared with the earlier period surveyed (up to 1979), purely financial transactions have come to predominate over trade-based transactions. The newer, non-bank traders are seen by banks as having a less consistent market presence; they are essentially price takers and do not make markets. They are eager to try new markets and instruments and tend to trade the same way for short bursts and then withdraw to await another opportunity. "They aim to create fluctuations and therefore turnover, on which profits depend." Some respondents assert that market ethics have deteriorated, possibly from unfamiliarity with established practice, and that dealing by traders for their own account is not unknown.

Technical trading systems, involving computer models and charts, have become the vogue, so that the market reacts more sharply to short term trends and less attention is given to basic factors. In particular, securities and commodities firms are reported to trade in foreign exchange as a commodity that they recognize as being as volatile as their original products: securities and physical commodities.

The new players have spurred the development of the broader and

more active market that is pictured in this survey. Among the other causes of this growth is the emergence of new financial markets and instruments, comprising futures, options, swaps and money and commodity funds, many of which have a forex dimension. There is also more privately managed money and therefore more individuals are trading. The market has broadened as banks rely more on forex profits from a wide range of instruments offered. The new players themselves tend to be specialists in one area, perhaps because they cannot compete on an equal footing with the commercial banks in the traditional markets. Another factor, in the view of both banks and securities houses, is that for the non-bank financial sector and some multinationals, forex trading has become a discrete profit center, expanded well beyond commercial requirements, though the companies may claim to do no more than hedge.

Finally, improved telecommunications and the presence of the larger banks in several time zones have created a continuous, round-the-clock market which responds instantaneously to new developments. In such a market, stop loss (or 'break point') trading can have a stronger effect on rates and may contribute to greater volatility.

6a. Do you think the use of technical models has had a significant impact on the market?

— 97% of bank respondents and 87% of the securities houses reply in the affirmative.

b. Which of the following market participants have increased their use of these models in their trading activity?

An increased use of technical models is noted for all the participants, in the order listed below.

Ranking by commercial banks		Ranking by securities houses
1	Commodities houses	3
2	Bankers	1
3	Securities and brokerage houses	2
4	International money funds	4
5	Futures arbitrageurs	3
6	Non-financial corporations	5
7	Insurance companies	6
7	Pension funds	6
8	Central banks	7

7. Has the degree of concentration of foreign exchange trading by the world's largest banks increased or diminished since 1980?

— 68% of respondents believe that the big banks have captured a larger share, but 32% observe a diminished concentration. This result may be compared with the replies to question 3, which note that most of the new entrants to the forex market are parties other than commercial banks. It would appear from this that the share of the largest banks has increased relative to the banks as a group, but diminished as a proportion of the total market.

8. Which two or three of the following factors do you believe are most important in giving market makers a competitive edge in gaining new business?

The factors most often cited, in order of frequency, are the following:

Ranking by commercial banks		Ranking by securities houses
1	Ability to offer new products	1
2	Willingness to deal in large size	4
3	More experienced traders	3
4	Quality/size of forex sales force	2
4	Tighter bid-ask spreads	2
5	Larger corporate customer base for other products	4
6	Global trading networks	5
7	Willingness to hold major open positions	6
8	Capital committed to the business	7

A supplementary factor quoted by one bank is the ability to quote reasonable prices with minimum delay.

Volatility

9. Many participants believe the short-term volatility of exchange rates has increased in the last few years, compared with periods in the late 1970s (except among currencies in the EMS). Do you agree?

— All respondents agree that this is so.

10. Which of the following has caused increased volatility?

The causes listed in the question are here ranked according to the frequency of the replies by:

Commercial banks		Securities houses
1	Increased attention to short term economic and financial fluctuations	1
2	Increased use of technical models	3
3	Inability of central banks to control the market	2
4	Governments' "hands off" policies regarding their currencies	3
4	Other causes	3
5	Absence of stabilizing speculation	4

The "other causes" given include reference to the impact of new markets and institutions seeking profits from anticipating currency and interest rate movements, which bears out the observations made under question 5 on the market behavior of the new participants. Several respondents mention the greater freedom of capital movement and the resulting increased flows. Also referred to are the shifting of risk management from corporations to banks; improved communications, which allow all participants access to the same information and analysis at the same time; increased trading by some monetary authorities and quasi-government bodies; a low level of experience and poor training of dealers; more intra-day trading; and uncoordinated monetary and fiscal policies.

The general impression given by the replies to this question and question 5 is of more nervous, tense and anticipatory behavior.

11. Volatility can be viewed as temporary deviations from longer-run trends. In your opinion, has the nature of the increased volatility or the deviations been:

	%
Daily (incl. intra-day)	52
Week-to-week	31
Monthly	11
Longer	6
	100

Several respondents gave multiple replies. The majority opinion (83%) appears to be that deviations from trend last only a week or less. This is an important finding with implications for trade and capital flows. The survey of corporations, later in the report, addresses this aspect of volatility.

12. Would you welcome a greater commitment by governments to stabilize exchange markets?

Yes: 60%
No: 40%

Opinions clearly differ on this point. Some of the affirmative replies were accompanied by the proviso that stabilization should be attempted only by means of harmonizing monetary and economic policies, or only if stabilization means less volatility and not an attempted change in the direction of the trend.

Those opposed to government attempts at stabilization remark that these have served to increase volatility and reduce liquidity. Not governments, but the market itself, should be relied upon. Others actually welcome volatility, because it offers scope for profitable dealing.

13. If so, how should this be attempted?

		%
a.	By harmonizing monetary and economic policies	43
b.	By intervention in the markets	17
c.	By both of the above	40
		100

This question probes the views of those in favor of official stabilization and the replies indicate that most of these respondents see a role for both intervention and policy convergence, with the emphasis on the latter. The desired intervention is described as guidance and steadying operations.

14. Do you expect such attempts to be made?

Yes: 53%
No: 47%

The replies to questions 12 and 13 showed that 60% are in favor of official attempts to stabilize exchange rates, though skeptical of intervention by itself. Just over half the respondents to this question (No. 14) expect such attempts actually to be made. One respondent expects only a political effort without substance.

15a. Has the level of volatility had a significant impact on the profitability of your firm's foreign exchange activities?

Yes: 81%
No: 19%

b. Has this effect been positive or negative?

Positive: 85%
Negative: 15%

The reasons given for the mostly positive impact of volatility on profits center around the observation that market makers usually benefit by volatility in view of the jobbing and arbitage opportunities it affords. The spot market has benefited more than the long forward market. More uncertainty tends to produce wider spreads, though lower volume. A change in expectations, on the other hand, stimulates active trading.

Another positive effect is that professional competence has come to the fore. Risk management has had to be strengthened and improved techniques devised.

On the negative side, respondents refer to the need to square positions daily, which is said to limit activity; the heavy personnel expense involved in risk management; and the tendency for traders to become "gun shy" in very volatile markets. The opinion is also expressed that, for equal percentage movements up or down, the average trader will cut his profits before his losses so that the operating results tend to be skewed to the loss side.

Volatility is seen by some to have an overall neutral effect on a yearly basis, but with greater swings in daily or weekly earnings. Those running a predominantly customer oriented business, and not taking big positions, are less affected by exchange rate volatility.

16. What best describes your firm's spot foreign exchange trading?

Ranking the replies (multiple in many cases) by frequency, we find:

Ranking		%
1.	Professional, active "jobbing" in the market	63
2.	Trade against technical resistance and support levels based on models	12
2.	Do not follow any particular strategy consistently	12
3.	Approaches described below	7
4.	Take large strategic long/short positions based on internal currency forecasts	6
	Total	100

Banks describing their approach differently include those who prefer to be middlemen in an active two-way business of banks and customers for a net spread and without substantial exposure, and those who follow rules stated as: "Keep losses small, run profits, do not fight trends and maintain commercial spreads". Some securities houses regularly arbitrage between the futures and the spot markets.

The taking of strategic positions is further described as being based on expectations as to the evolution both of spot rates and of interest differentials.

The jobbing approach is qualified by some as proceeding from a strong customer base and being confined to major currencies and intraday activity.

17. What best describes your firm's approach to forward foreign exchange trading?

The trading approaches suggested in the question were endorsed by respondents in this order:

Ranking		%
1.	Take mismatch gaps based on expected interest rate movements	43
2.	Work primarily with customer transactions	37
3.	Do not follow any particular strategy consistently	10
3.	Use forwards to supplement liability management	10
		100

This response tallies with the replies to questions 2, 5, and 16, indicating that interbank business predominates, though with a solid substratum of customer business.

18. Does your firm regularly forecast exchange rates for trading?

	Commercial banks	Securities houses
Yes:	55%	36%
No:	45%	64%

If so, how much do these forecasts rely on (percent of replies):

	Little	To some extent	Considerably	Total
1. Technical models/signals	8	25	6	39
2. Judgmental/fundamental analysis	0	14	21	35
3. Momentum models	20	6	0	26
				100

A small majority of banks and a minority of securities houses regularly forecast exchange rates and those who do employ the three approaches specified in the proportions shown above, but with different degrees of reliance. It would appear, therefore, that while technical analysis is fairly widely used by forecasters, judgmental and fundamental factors are given the most weight.

The Group's 1980 Survey, on the impact of floating rates, revealed that forecasts were most often based on the adjustment of currency values for differing inflation rates; in today's world interest rates appear to be a primary element in exchange rate forecasting in accordance with the greater importance of capital flows.

19. Have you changed your trading strategy as a result of increasing volatility (in terms, for example, of position limits, internal management control, willingness to commit capital)?

Yes: 69%
No: 31%

Among those who have adapted their strategy, some add that they did so by running smaller positions and fewer long-term ones, and making less use of stop loss orders.

20. Have markets on balance gained or lost in terms of their breadth, depth and resilience?

	Commercial banks	Securities houses
Gained:	21%	53%
Lost:	79%	47%

Even though market volume has doubled (question 1) and there are more participants (question 3), a majority of the banks feel that markets have in the process forfeited part of their depth and resilience. This may be attributable partly to the notably different approach taken by the new entrants (question 5). An indication of this is the different response by the securities houses.

Risks/Profitability

21. How is foreign exchange risk defined and measured in your operation?

The detailed replies received can be dissected as to the definition, measurement and handling of the foreign exchange risk.

On spot deals, the risk is *defined* as the delivery (or counterparty) risk.

On forward deals, the risk is the possible spot rate change between the opening and closing dates. On maturity, the delivery risk arises.

The methods of *measuring* the exchange risk vary a good deal. The delivery risk is generally assessed as 100% of the contracts maturing on any one day. The exposure risk is broken down into overnight exposure and forward maturity exposure, where the overnight amount is "marked to market" (or valued at current rates) daily. Forward transactions are viewed separately as to currency and period and the risk is measured as between 5% and 25% of the amount of individual transactions. In the aggregate, the forward risk is estimated to be 20% up to one year. Others measure the exposure risk on the basis of net committed cash flows per currency and by maturity, and summed across all maturities. The risk assessment may vary with the instrument used, as a function of its sensitivity to rate changes. Some banks simply gross individual overbought and oversold positions and apply a rule of thumb of 10% for assessing the risk.

The procedures for handling or *limiting* the foreign exchange market risk are variously reported as follows. Position limits are based on volatility measures and take account of the liquidity of the market for each currency. There are daily limits on daytime, overnight, and forward positions. Open positions are constantly marked to market and some banks apply a stop loss of 1% on intra-day and overnight positions. The forward risk may also be subject to cumulative mismatch limits. In the case of branch banks, there are individual branch limits based on "perceived need" and the caliber of the dealing staff. These limits are centrally administered. Methods for limiting the counterparty, or credit, risk include separate limits on the amounts transacted for spot delivery and forward delivery.

As to the considerations that bear on the setting of limits, it is reported that the several limits reflect the potential loss the bank can tolerate, given the size of its capital. Risk standards may also be based on regulations issued by the central bank, or legislation may provide, for example, that the total of all open positions is not to exceed 30% of a bank's capital.

22. Do you believe that the counterparty risk in the exchange market (the possibility that a customer or trading partner fails before the maturity date of a foreign exchange contract) has increased or diminished?

76% of the respondents consider that the counterparty risk has increased; 22% that it has not increased; and only 2% believe it has diminished.

If so, have you changed your trading strategy, and in which ways?

Most replies are to the effect that the increased counterparty risk has

led to a stricter credit policy rather than a change in trading strategy. Thus, more rigorous credit analysis and exposure control are applied to customers, be they non-banks, financial institutions or commodity traders. Caution is exercised when counterparties trade very big amounts. Traders have been instructed not to deal with a party unless a credit facility has first been approved. Ratings and limits for countries, banks and companies are more frequently updated. Lists of foreign counterparties and correspondents have been pruned and limits selectively reduced, both as to daily and overall activity. A lower alarm level for irregularities (such as late payment) is mentioned. One bank reports the introduction of "margined foreign exchange."

23. What kind of significant problems are the exchange markets most vulnerable to?

The several problems listed in the question were ranked by respondents as follows:

		%
1.	Disorderly markets in general	37
2.	Sudden curtailment of credit lines	22
3.	The failure of small banks	15
4.	Important new regulatory restrictions	12
5.	Large losses due to a major bank's currency trading difficulties	8
6.	Other	6
		100

The other problems mentioned are:

a) The inability of market infrastructure to adapt to rapidly changing market and credit conditions;

b) The absence of consistent depth, breadth, and liquidity;

c) Declining professionalism in the market; and

d) The failure of non-bank speculative enterprises.

Many of these problems are related, and the common denominator appears to be that market conditions are extremely variable and counterparties not always reliable.

24. If you believe market risks have increased, what in general has been the response of your institution?

All but three reply that they have acted to minimize exposure to risks as

far as possible. (The alternative answer supplied in the questionnaire was: "Accept a greater degree of risk in the expectation of greater profitability.")

The majority reply is amplified by the following statements: reduction in the size of positions and individual transactions; greater selectivity in risk exposure, coupled with more frequent credit review; greater involvement by senior management in daily operations and improved management information systems; emphasis on intra-day jobbing rather than on position-taking; concentration on customer business, which has fewer risks and greater profit potential; withdrawal from direct dealing in secondary currencies; greater use of statistical modelling in setting limits and defining risk/return relationships.

Others have responded by widening their bid/offer spreads and by accepting a higher degree of risk during working hours in the most liquid time zone, viz., Europe.

25. Has the adoption of FAS 52 altered the approach of US corporations to the markets?

Yes: 89%
No: 11%

If so, in which of the following ways?

		%
1.	Reduced transactions volumes	38
2.	More active hedging of economic exposures (as opposed to accounting/translation risks)	36
3.	Increased transaction volumes	18
4.	Other	8
		100

FAS 52 provides, in brief, that exchange rate gains or losses on payables and receivables are reflected in the income statement, but that translation adjustments (when converting items in the financial accounts from foreign currencies to the reporting currency) and exchange rate gains or losses on investments and hedging transactions are reported as a separate component of equity.

The need is also seen for new financial products which afford protection at lower cost. Long-term financing has not been affected, but corporations are more inclined to accept short-term local financing.

Respondents observe that many corporations view the treasury function as a profit and loss center and actively manage their exposures in order to produce profits, or at least avoid losses.

Impact of new instruments and techniques

26. How active is your firm in the following markets?

("very active" = $100m or more in daily volume;
"somewhat active" = $25m to $100m; and
"slightly active" = less than $25m)

Respondents operating in these markets reported as follows on their proportionate involvement in each:

	%
Currency futures	20
Listed currency options	24
OTC currency options	24
Long-dated currency swaps	32
	100

The trading by most of the above respondents is described as "very active" in currency futures and long-dated currency swaps, and as "slightly active" in listed currency options. There is, however, considerable variation from one bank or securities house to another. In OTC (over-the-counter) currency options as many are "very active" as are "slightly active." One-quarter of the respondents was not active in one or more of these markets.

In reply to a separate question, securities houses reported that 76% of their operations in the above instruments stemmed from customer orders.

Also asked was the predicted activity for 1986 in currency futures and options. A shift towards "more active" is noticeable, with currency options expected to show relatively more growth than futures.

27. Have you developed new credit standards to govern your activity in these markets?

Yes: 64%
No: 36%

Those who have not felt the need to develop new credit standards comment that this type of business is subject to their regular evaluation of credit risk, which can be managed within the existing set of margin and trading limits. Some trading and counterparty limits have been tightened and are more closely monitored.

Among the majority of respondents who have made changes, some report that the risk evaluation for new instruments has been adapted and that a method has been devised to evaluate risks on swaps. In more specific terms, some estimate the risk on long-dated swaps at 30% of the contract. The swap portfolio is reviewed every two months. Open interest standards have been introduced for exchange-listed instruments. Regarding options,

it is pointed out that when the bank writes (sells) an option, no *counterparty* risk is incurred; if the option is exercised, payment is made against delivery. When the bank purchases an option, standard risk evaluation applies. In addition, short options are margined, and long options are paid when opened.

Finally there are banks which are preparing to enter this field and are considering new credit standards. Procedures are being developed to follow transactions through the contingent accounts.

28. Are currency swaps integrated with your firm's forex trading activities from a management point of view?

Yes: 67%
No: 33%

From an exposure-management point of view?

Yes: 77%
No: 23%

From a credit-risk point of view?

Yes: 47%
No: 53%

From a *general management* point of view, most banks integrate currency swaps with their overall asset and liability strategies, as a joint responsibility of the forex, capital-markets and banking departments. Even though handled by the investment banking division, the swap desk works in close cooperation with the forex and treasury divisions. The marketing focus, however, is in some banks separate from that of the traditional forex products. In most securities houses, currency swaps are not integrated with forex management.

The *exposure management* of currency swaps is in most banks also fully integrated with the position control for all forex activities, currency limits being the same as for a straight purchase or sale. One bank reports having separate controls and limits for currency swaps. This is also the case in most securities houses.

The *credit-risk management* is in most cases a separate function. The forex department has no authority to assess credit risk. This is done by the credit, or advances, division which examines recommendations by the forex and treasury departments. Like all other transactions, currency swaps are evaluated according to aggregate risk norms.

29. What impact is the growth of currency options and currency futures having on the foreign exchange market?

The types of impact listed in the question are ranked by respondents as follows.

		%
1.	Increasing the volatility of interbank trading	34
2.	Only modestly reducing the demand for forward contracts	31
3.	Developing as a parallel forward instrument with a secondary market of its own	25
4.	Causing corporations to begin selling options instead of buying them because premiums are higher	7
5.	Other (specified below)	2
6.	Substantially reducing the demand for forward contracts	1
		100

The "other" effects noted are (1) that currency options and futures reduce risk to corporate customers at the expense of increasing risks to banks; and (2) that these instruments raise psychological barriers because premiums are payable in advance and the "upfront" cost is higher than the cost of outright contracts.

With reference to the possibility of corporations themselves writing (selling) options, it is remarked that this is not as yet happening, but that if they were to do so, a true market would develop. At present, corporations are buyers of options and banks are the writers, compelling the latter to hedge all or part of their risk in the spot market. (It is not generally feasible as yet for banks to square their options book by buying options.) The survey of corporations confirms that corporations have not to date taken to writing options.

Overall, the replies indicate that currency options and futures are not (or not yet) serious competitors to forward contracts.

30. How important do you think the following foreign exchange services will be in the next five years?

The figures show the number of respondents who rated each service as shown.

		Essential	Very important	Important	Unimportant	Uncertain
a.	Spot trading:	41	5	3	-	-
b.	Forward contracts:	29	17	3	-	-
c.	Long-dated forward contracts:	10	20	17	1	1
d.	Foreign currency futures:	2	8	25	13	1
e.	Listed foreign currency options:	3	15	26	2	3
f.	OTC currency options:	7	20	14	5	3
g.	Currency swaps:	9	14	20	2	1
h.	(i) Forecasting using technical models:	2	16	19	9	3
	(ii) Forecasting using economic analysis:	3	10	19	9	2
i.	Foreign exchange consulting:	7	12	23	3	1
j.	Other (ECUs and options on ECUs):	-	-	-	1	2

From this it appears that the traditional foreign exchange services are expected to remain the mainstay of foreign exchange business. Nevertheless, the newer instruments (notably futures, options and swaps) are accorded a high degree of importance by many respondents.

2. Report on replies from industrial corporations

This part of the Group's survey was addressed to the "users" of the foreign exchange market, as distinct from the market makers, and aimed to ascertain how multinational business had adapted to the more volatile exchange rates of the past five years and what had been the effect on the level, cost and operating procedures of international trade and investment.

The following summary of the results is based on 50 replies from large, multinational corporations (out of 142 approached) having their head offices in 13 different countries, 21 in the United States, 7 in the United Kingdom, 7 in West Germany, 4 in Japan, 3 in Switzerland and one each in the Netherlands, France, Sweden, Korea, Venezuela, Italy, Austria and Belgium.

1. How is the foreign exchange risk defined and measured in your company/institution?

Defined

The common denominator of a variety of definitions employed is the distinction between the transactions exposure and the translation exposure.

The *transactions* exposure to exchange rate gains or losses arises on payables and receivables, including the foreign currency component of purchase commitments and sales not yet invoiced.

The *translation* exposure is the probable size of the adjustment to be made when converting items in the financial accounts from foreign currencies to the reporting currency. (Also known as accounting exposure.)

Other partly overlapping definitions of the foreign exchange risk are *economic* exposure, or the amount of the difference between foreign currency assets and liabilities, *operations* exposure, or the effect of exchange rate movements on the income statement (alternatively on cash flows) and

strategic exposure, or the amount of own-currency funds committed to a foreign-currency area. (See answers to Question 9.)

Measured

Many US companies apply, often with minor modifications, the accounting rules for foreign currencies known as Financial Accounting Standard No. 52 (FAS 52). Measurements of the forex risk also include forecasts of exposed future cash flows up to 12 months ahead (1979: 6 months ahead) and commitments made for the construction of facilities abroad. Some measure the effect principally on a balance-sheet basis; for example, assets and liabilities are restated in own currency at the end of every month. Others include inventories at foreign subsidiaries only to the extent that foreign prices cannot be raised to maintain a constant own-currency value.

2. Has a formal statement concerning the *management* of foreign exchange exposure, risks and opportunities been adopted by the firm? If one has, please attach a copy.

Most firms have a formal statement of principles of exposure management, and several submitted copies or extracts for the purpose of this survey.

Regarding *investments*, the object is to balance foreign-currency assets and foreign-currency liabilities, including borrowing, within limits for unmatched assets set by the company board. In high-inflation countries, a slightly "short" exposure is aimed at. The offsetting of the exchange risk on foreign assets may take the form of financing each foreign subsidiary mostly in its own currency, or in the currency of its sales revenue. Hedging of investments is normally accomplished by raising loans in the corresponding currency, preferably long-dated in the case of soft currencies (where available). Others see no need for permanent hedging of investments.

Regarding *transactions* exposure, the protection of cash flows is paramount, taking precedence over measures to protect earnings and equity. Payables, receivables, deposits, short-terms loans and dividends tend to be protected when arising by such methods as leading and lagging, currency options, forward contracts (incl. forward commodity contracts) and invoicing in the company's "own" currency. Where the latter is not possible, flexible pricing policies are followed, or the corresponding purchases are made in the currency of sale.

The *translation* exposure is not normally offset through forward contracts, but is kept under review within stated limits and may be hedged.

3. Has the firm become more or less sensitive to foreign exchange risk? If so, how has this been manifested?

Most firms (60%) consider that they have become more sensitive to forex risks, and they attribute this not only to the greater volatility of exchange rates, but also to increases in the size of foreign transactions; to acquisitions and participation in joint ventures; and to customers' demands to be invoiced in their own currencies.

Others report their exchange risk sensitivity has not changed as they have always been keenly alive to this risk. The application of FAS 52 has tended to soften the impact on earnings. These rules are also seen to allow more flexibility in the timing and balancing of the foreign exchange risk.

Many respondents also volunteered some remarks on how they managed the greater exchange risk. Among the policies adopted are: longer forecasts of economic exposure; quarterly exposure reports to management; more regular covering and hedging through various instruments; reduced open positions (in contrast, some undertook more unhedged investing in strong currency areas); and alternative sourcing and invoicing. The manufacture of components in several countries for assembly in others also acts as a hedge of currency risks attending the sale of the completed product.

4. How, if at all, has your firm's philosophy changed with respect to:

(i) cash management;

(ii) short-term portfolio investments;

(iii) financing foreign operations;

(iv) the use of foreign currency debt?

No change in the past five years was reported by just over half of the respondents. Current policies and recent changes are noted under the following headings.

(i) *Cash management*

Operating cash, of course, is held in the foreign currency concerned, excess amounts being minimized through leading and lagging, intercompany loans and dividend payments. Cash held for remittance (e.g. dividends and fees) is either held in the parent company's currency or hedged. Foreign-currency cash and marketable securities are more actively managed, either centrally or at regional level. Greater attention is given to bank compensation policies. Group netting systems have been introduced. As to foreign currency arising from exports, the tendency is to accelerate collection and conversion into the parent company's currency.

(ii) *Short-term portfolio investments*

Subsidiaries normally place funds in their operating currency. If in oth-

ers, this is in order to hedge cash flows in third currencies. More frequent switching and the use of a wider spectrum of liquid instruments are reported. So is greater selectivity as to bank deposits in view of the bad or doubtful loans made by certain banks.

(iii) *Financing foreign operations*

There is a trend towards more local currency financing, particularly of working capital. Financing between foreign subsidiaries tends to be fully hedged. For fixed assets also, foreign-currency debt is selectively used. The original investment in "own" currency is normally small and equity is built up out of retained earnings. Most companies aim to match foreign assets with foreign liabilities.

(iv) *The use of foreign-currency debt*

In conjunction with (iii) above, foreign-currency debt is also used specifically as a hedging tool, inter alia, to cover the so-called translation exposure. The interest differential and the exchange risk, of course, are weighed up. United Kingdom companies, which were formerly obliged to finance foreign investment with foreign borrowing, have in recent years employed more sterling debt in overseas subsidiaries.

European companies are less intent on covering the foreign exchange risk on operations within the EMS area because of the lesser volatility of exchange rates.

Overall, the approach of companies to the four areas of financial management listed in this question has evolved towards more centralized decisions.

5. Has responsibility for foreign exchange decisions become more centralized?

AND

6. If so, has the responsibility for other financial functions, e.g., cash and portfolio management, also become centralized?

The number of firms which have opted for greater centralization is evenly balanced with those which maintain the existing degrees of local and central responsibility or are decentralizing.

The norm appears to be for foreign exchange decisions relating to commercial transactions to be decentralized, while central control is exercised over the forex aspect of the financial functions, including investment, borrowing, and cash flows to and from head office. Foreign currency cash management methods range from reporting and central review systems for overseas units, to head office directions as to the investment of excess cash, and group-wide netting systems.

In other corporations, cash placement in the respective national money makets is decentralized, subject to quarterly projections discussed with head office.

A tendency towards centralization is seen in corporations which have taken steps to streamline the flow of forex data between the field and head office, and to involve the latter more in the forex decisions of the overseas units in order to improve control and devise offsets. Alternatively, a basic policy is to be followed, to be departed from only by consensus.

Other firms, in contrast, are introducing decentralized exposure management for operations and transactions, or are making each division responsible for its forex decisions.

7. What is the relevant time horizon for foreign exchange decisions? Has it become longer or shorter?

The time horizon for forex decision is a function of the nature of the transaction. For commercial transactions the exposure is geared to the payment terms and may run from a few days to six months. The time horizon for decisions as to the currency to be used and forward cover policy has tended to lengthen; as more US export sales, for example, come to be denominated in currencies other than the dollar, marketing plans in that respect acquire a horizon of several years. In engineering contracts, a longer perspective on currency developments has had to be taken, covering the tendering period as well.

For short-term financial transactions and cash flow exposure, the applicable forex horizon is reported to be from one to six months. For fixed asset financing and long-term commitments, managers must look several years ahead, but this has always been the case and there is no indication of currency decision horizons having changed. The same applies to the translation exposure, which is related to the reporting period. The main change has been in the awareness of the *need* to look ahead and plan investments and financing with hedging considerations in mind.

8. Is there heightened concern about the effects of foreign exchange fluctuations on reported interim financial results?

A majority affirm that there is heightened concern, particularly as to the quarterly results. Not only the fluctuations, but also the foreign currency exposure itself have become greater for many companies. Hedging, where possible, has helped to mitigate the effect. So has the adoption of FAS 52, whereby changes in net foreign assets are not reflected in net income; the impact on shareholders' equity has not had a significant adverse effect.

Some see a problem in communicating with investors, when the

reported results inaccurately represent real changes in the economic conditions of the company.

Some companies, mainly European, do not report interim results. The accounting treatment of forex effects also differs from country to country. In some, the effect of currency changes is separately reported in an adjustment account.

9. Does the firm distinguish between the translation and the cash flow effects of foreign exchange movements?

The great majority make this distinction, though some do so only for internal purposes. Most are concerned primarily with the cash flow effect of forex movements, and manage it actively. Cash flow analyses for each currency may be made. There are also tax implications to be considered.

The dividing line between cash flow and translation effects is not, of course, rigid; provision made for the depreciation of assets impinges on earnings and indirectly on amounts repatriated. Therefore some companies regard both effects as economic exposure, where the translation exposure is a proxy for future cash flows.

Where a policy distinction between the two effects is made, it finds expression in the different ways the exposures are managed: cash flow is protected by forwards and options, translation exposure by financial structure first and by hedging as a back-up. Many companies do not hedge the translation exposure on the ground that in the long term exchange rates gravitate towards purchasing power parity.

10. How are foreign exchange considerations reflected in project economics when evaluating an investment in another country?

Two different attitudes are evident in the replies. One is to evaluate a foreign investment's merit only in terms of the currency concerned and to give little consideration to future exchange rate movements. Another is to allow explicitly for the exchange rate risk in one of several ways.

A foreign project may be evaluated entirely in terms of the firm's reporting currency, using estimated exchange rates for future periods, and then including a risk factor for exchange rate movements or applying sensitivity analysis on the basis of different assumed exchange rates. The company's investment criteria must be satisfied when expressed in the reporting currency.

Alternatively, all estimates and projections are made in the local currency (i.e. the currency in which most of the subsidiary's business is conducted) and only the projected results are translated, using forward exchange rates, or if not available, a rate based on expected inflation and interest differentials.

Most companies attempt to match assets and liabilities in the same currency, in which case the "hurdle rate" in discounted cash flow analysis represents the cost of funds raised in that currency.

Some companies evaluate the whole project, covering projected balance sheets, earnings and dividends, both in the local currency and the reporting currency. For investments in less developed countries, the projected depreciation is very important. Attention is also given to the risk of exchange controls on remittances.

11. Has the number of staff involved in and costs of managing the firm's foreign exchange position risen?

In most of the reporting firms (55%) staff has not increased or has actually been reduced, but at the same time the experience level of those responsible has risen, more management time and effort are devoted to the subject, and costs are generally up, owing to the use of computer systems and the need for more backup information.

These comments apply even more to those firms which have increased the staff complement engaged in forex management, though most note that the increase has been modest and due also to greater overseas investment and the overall growth of the business. Increases have occurred more at operating level than at head office. For some, the forex department is a profit center, which has added value to the firm.

12. Are volatile exchange rates deemed by your management to represent a material new element of risk to international (i) trade and (ii) investment?

A great majority reply that this is so, particularly in international trade, but many add that the forex risk has been felt for many years now and can be handled, though volatility has emphasized the risk. It is found increasingly necessary to price products in the importer's currency and carefully assess the risk, which may or may not be covered forward. What is also relatively new is the size and speed of exchange rate movements. For US firms, the strong dollar is a more serious matter than volatility.

Regarding international investment, rather less concern is expresed. The forex risk is accommodated in project analyses, a higher required rate of return is set and a long view is taken.

13. Have volatile exchange rates resulted in the elimination, deferral or reduction of any foreign direct investments?

Most firms reply that volatility as such has *not* been a factor in discontinuing direct investment abroad, but when a decision to do so was

taken it was in view of the broader financial and economic situation, including rapid inflation, interest rate levels and continuing depreciation of the currency concerned, or because official currency regulations precluded profitable operation. A volatile exchange rate has an effect on the choice of financing, in that a project is preferably financed in the same currency. Protection against volatility involves additional costs, which enter into the project evaluation. The remaining forex risk requires to be compensated by a higher return, and this has resulted in the cancellation of some cross-border projects.

Volatility of the firm's home currency renders investment in export production more hazardous and is an inducement to invest and produce in customer countries.

14. Have volatile rates rendered international trade more or less attractive? Have they, in fact, influenced the level of your international trade?

Respondents agree that the level of their international trading has not, in the aggregate, been influenced by the volatility of exchange rates. Important shifts have occurred, of course, in response to the progressive *re-alignment* of currencies. Exports are down to countries whose currencies have depreciated sharply. Competitive positions have also been changing.

On the attractiveness of foreign trade, judgment is divided. A small majority see foreign trade as being no less attractive under volatile rates than it was before. Expansion has continued; the effect on profits can be both ways. Trade is judged on the basis of its long-term business value; and the forex risk can be hedged, albeit at a cost. There is a greater tendency to produce in the country of sale, so that the composition of trade has altered. Others point to the negative effect of the added uncertainly produced by volatile rates, particularly where lead times in tendering and delivery are long. Trade has become less attractive in some market areas, and everywhere more difficult. Greater risk demands a wider trading margin and competitive positions have become less secure.

15. Have volatile rates raised the cost of conducting business internationally?

Just over half of the replies are in the affirmative. The added risk, if unhedged, requires to be compensated by higher prices, if possible. Hedging the risk raises the cost of doing business, which equally puts upward pressure on prices. The cost of capital may also be higher. Others detect no overall increase in business costs, but in a situation of highly vari-

able international cost-price relationships, there is a greater chance of appreciable opportunity cost, that is, the retrospective benefit of the opportunity foregone.

16. Have your prices been raised to cover the incremental expenses of managing foreign exchange positions and hedging?

The replies are evenly divided. Although some prices have been raised for the reason stated, the overriding consideration remains the state of the market, or the competitive environment, bearing in mind the objective of maximizing the long-run market potential. Some state having tried raising prices, but find the price level achieved still unsatisfactory. The forex management cost, of course, is only a very small part of total input costs. The impact also varies, and in highly decentralized operations no attempt was made to raise prices across the board.

17. What factors are relevant when selecting the currency of borrowing?

This question ties in with No. 2, on the management of the foreign exchange exposure. In line with the replies given there, the prime consideration in selecting the currency of borrowing is the asset position as well as the transaction exposure in that currency — the so-called functional currency of the investment or operation. The object is to achieve "balance sheet neutrality" unless another currency offers a particular rate advantage on a covered basis or reduces exposure elsewhere. Some emphasize as a criterion the expected currency composition of the revenue stream available for repaying the debt.

The inclusive cost of the borrowing, being interest plus cover, runs a close second as a factor in choosing the currency of borrowing. Also relevant are the swap opportunities that may be associated with the borrowing.

Some companies follow a policy of always or normally borrowing in the currency of their center of operations — the "reporting" currency.

Other factors mentioned by respondents include the availability of loans; the size of the issue relative to market depth; the existing financing; the banking and investor relationships; and tax aspects.

18. Have you become less or more willing to borrow foreign currencies long-term? Do you attempt to balance foreign currency assets and liabilities?

Most respondents report that there has been no change in their willingness to borrow long term in foreign currencies. Many are in any case short-term oriented in their borrowing, or have become so, in view of high interest

rates or a good cash flow enabling them to retire long-term debt. Those who are willing to borrow long-term are keener to borrow for matching purposes than for financing as such.

In reply to the second part of the question, the great majority state as their preferred strategy the balancing of foreign-currency assets and liabilities, while giving full weight to the after-tax interest cost of debt. Matching is more common for current than for fixed assets. Some, who had gone no further before, now selectively attempt to match their fixed asset exposure with foreign currency debt. This depends also on policy as to the debt/equity ratio in the firm's financing.

19. Regarding the currency of denomination for sales to (i) affiliates and (ii) third parties:

(a) What factors are important in selecting the currency?

(b) What percentage of your exports and imports are denominated in the currency of (i) your home country, (ii) the importer's country, and (iii) another one? Specify the most important one(s). To what extent has the currency of denomination for international trade changed over the past five and ten years?

(c) Some scholars argue the currency of denomination is irrelevant because market forces will preclude any supplier or customer from using this aspect of a contract to extract a consistent gain over time. Do you agree or disagree; Why?

This complex question drew few complete responses, but enough indications of corporate policy as to currency denomination for an overview to be given.

Multinational corporations comprise several extractive and/or manufacturing and marketing operations spread over several nations, with substantial transfer of products or components between all or most of them. Therefore, the exports of one unit are the imports of another, and no general rule as to the currency used in invoicing imports and exports, respectively, can be discerned. Rather, there are differing corporate policies and these, moreover, are subject to change. The determining factors include the product traded (some commodities are always traded in one particular currency, such as oil in dollars or tin in sterling); the location of the main center of operations; the varying strength or weakness of currencies; tax considerations; accounting policies; hedging costs; and competitive conditions.

The majority of responding firms invoice most of their *export* sales (from 65% to 100%), both to affiliates and others, in the exporting unit's

own currency, except where the exporter is situated in a weak currency area, when the US dollar or another strong currency is more commonly employed. *Imports* by reporting units in the United States from non-affiliated companies are mostly invoiced in US dollars (75% of such imports, on average), and the remainder (10% to 30%) in the supplier's currency. In regard to imports from affiliated companies, the most frequently-reported policy is to employ the affiliate's home currency, in order to *concentrate* all of the group's forex exposure in the corporate head office. Other corporations, in sharp contrast, aim to *decentralize* forex management among the operating units, provided these are situated in countries with developed forex markets. In those groups, inter-company trade is as a rule invoiced in a common currency, normally that of the head office, so that forex exposure arises in the affiliated companies located elsewhere.

The demand of the market to which goods are exported, including competitors' market practice, is repeatedly emphasized in the replies as the overriding consideration in selecting the currency of denomination. Subject to that, the general practice, as stated above for export sales, appears to be to invoice in the "functional currency" of the exporting or marketing unit, i.e., its accounting and reporting currency. If customers require billing in another currency, the price quoted would include the cost of forward cover.

Certain special factors, applying to some companies in some cases, are noted next. Exchange control regulations may cut across policies followed elsewhere. Exports to less developed countries tend to be invoiced in US dollars, irrespective of source. Sales to small customers, not well versed in foreign exchange, may be priced in the customer's currency. For trade between affiliated companies, the choice of currency can be influenced by the tax status, the cash flow, the profitability and risk-bearing capacity of the respective companies.

Changes in practice as to currency denomination over the past five and ten years are noted by most respondents (only four replied: No change). In some commodity markets, sterling has been replaced by other currencies. In product markets as well, some perceive a greater use of the US dollar, but others see a trend towards the use of non-dollar currencies, notably DM and yen. It is also reported that companies have become more flexible in denominating sales in different currencies in order to accommodate customers. This is possibly related to the improved hedging facilities now available. These facilities have also enabled corporations to introduce policies such as for the manufacturing units to invoice the marketing units in the functional currency of the latter, whereas in the 1970s the manufacturing units invoiced simply in their own respective home currencies.

The proposition put in the third part of the question, that the currency of denomination is irrelevant, drew qualified assent from only a few respondents. These agree that no *consistent* advantage can be gained from using any one currency, because exchange rates tend to adjust to relative rates of inflation. Some add that the proposition may also be valid for short payment terms or, more generally, when both parties to a deal are financially astute.

The majority disagree, however, and point out that:

(1) Business consists of a series of transactions, each taking place under particular conditions and perceptions prevailing at that time. The expectations and requirements of the parties to each deal are paramount. In the event, the choice of currency does produce additional profit for one of the parties.

(2) Importers prefer being billed in their own currency, particularly if they expect it to weaken. The dictates of the market play their part here. The ability to manage the forex risk may also vary, as between supplier and customer.

(3) Many customers evaluate bids after converting prices into a common currency at the rate for the day. Therefore, the choice of currency can be critical.

(4) Even in the most liquid forex markets, some risks cannot be completely covered, and this also influences the choice of currency.

(5) A number of countries restrict the hedging of purchase commitments in an organized forward market. If the supplier does have access to forward cover in his country, however, he will be able to accommodate the purchaser by invoicing in the latter's currency and so gain a competitive advantage.

20. With floating exchange rates, capital and trade controls should be both less prevalent and less restrictive. Has this been your experience or do restrictions continue to inhibit the free flow of money and goods?

The majority opinion is that capital and trade controls have become less prevalent and, where they still exisit, less restrictive. Others, however, observe a tendency towards tighter restrictions, also on borrowing in other countries. All respondents point out that controls are still in force in many parts of the world, mainly in non-industrial areas, less developed countries and Southern Europe. It is also pointed out that high inflation and rapid exchange depreciation can be more serious impediments to trade and capital flows than official controls.

21. Have you, as a result of volatile exchange rates, taken any deci-

sions to achieve a desired accounting result and sacrificed an economic gain?

The great majority reply in the negative, some adding that management concentrates on cash flows, and that the accounting result is a secondary consideration. Others say that all forex risks are covered or hedged so that the results are not affected by exchange-rate fluctuations.

Those few who admit to having pursued a desired accounting result at the expense of economic gain state that this was highly exceptional, owing to special circumstances.

22. What impact is the growth of (a) the currency options, (b) currency futures market having on the foreign exchange markets?

a. Increasing the volatility of trading;
b. Substantially reducing the demand for forward contracts;
c. Only modestly reducing the demand for forward contracts;
d. Developing as a parallel forward instrument with a secondary market of its own;
e. Causing corporations to begin selling options instead of buying them because premiums are high.

Hardly any respondents distinguished between options and futures in regard to the several effects listed, and then only in the sense that options may be a more frequent alternative to forward contracts than futures are.

(a) All but one respondent describe the impact on trading of options and futures as contributing to increased volatility. This is attributed to the attractions of low margins and high leverage, and to banks having to cover their option position in the spot market. The opinion is also given that because each transaction needs two willing parties, the economic effect of options and futures is probably beneficial.

(b) and (c) If the new instruments have reduced the demand for forward contracts at all, the reduction has been very small and confined to US dollar forwards, not between non-dollar currencies. Others see no reduction, as options and futures have expanded the currency market overall. They are useful alternatives to forwards for hedging certain types of transaction or position. They afford greater flexibility in arranging currency risks: options in particular are ideal for covering the exchange risk on tenders.

(d) The secondary market for options and futures is still too thin for corporate trading. It lacks the volume of the forward market through the banks, but is frequently given credit for providing market direction. High cost is cited as an inhibiting factor.

(e) Respondents have not themselves written options, nor observed others doing so. Corporations are unwilling to assume the liability, despite high premiums, although one respondent is considering option writing, as a means of hedging selected exposures.

23. In recent years, there have been long-lasting swings in real effective exchange rates of all the major currencies. Do you think that these have often carried rates to "distorted" or "unrealistic" levels or alternatively, do you believe that the markets have been reasonably accurate in determining exchange-rate trends?

A majority (70%) of respondents think that forex market swings have often carried rates to unrealistic levels, as compared with the purchasing power of currencies. They ascribe this to market momentum, or a pendulum effect, that is, the tendency for markets to exaggerate movements and temporarily to overshoot the underlying trend. Indeed, the trend itself may be the "wrong" one, at least for manufacturers.

Others maintain, while admitting departures from purchasing power parity, that "the market is always right," provided one recognizes that currencies are bought not only to purchase trade goods, but also to purchase financial assets and investment goods. Interest rates, safe haven considerations and other, broader economic and political expectations therefore, in the view of these respondents, enter into exchange-rate determination.

One comment was that central bank intervention and government controls are distorting elements, because of the added uncertainty they introduce.

24. Do you believe you (or your advisors) can consistently predict future foreign exchange rate movements more accurately that "the market"?

"No" is the unvarying reply, but with qualifications. Several firms add that they have experienced good results from their hedging, that their own assessment has more often been right than wrong, and that they have done well in identifying short and medium-term trends. Pegged exchange rates can be forecast more readily because disequilibrium becomes apparent before the rate is altered.

25. How has the adoption of FAS 52 affected your approach to foreign exchange management?

A majority (80%) of the United States firms (to whom this question was addressed) report no, or no material, change in their approach to forex management as a result of the adoption of the accounting rules known as

"Financial Accounting Standard No. 52." Some had already converted to the recommended practice earlier; some continue to concentrate on cash flow and transaction exposure and do not hedge translation exposure, and some note that only the accounting for their exposure has changed.

Firms reporting a changed approach describe this as a wider focus on the entire balance sheet, rather than only on working capital. This has led to decisions being taken to reduce translation exposure by offsetting assets with liabilities in the same currency. Also to greater readiness to borrow in other currencies at lower interest rates and to route the interest expense through the income statement while deferring forex gains and losses in the special equity account provided for in the new rules. Overall, FAS 52 is said by these companies to contribute to greater flexibility in the timing and methods used to hedge forex exposures.

26. Many market participants believe the short-term volatility of exchange rates has increased in the last few years, compared with periods in the late 1970s (except among currencies in the EMS). Do you agree? If so, which do you think are the principal forces creating greater volatility?

This question explicitly gauges perceptions of volatility and its causes. Close on ninety percent of respondents do believe that the short-term volatility of exchange rates has increased compared with the late 1970s. The forces thought to have produced greater volatility are the following (not necessarily in order of importance):

- The fast, worldwide flow of information and the international, 24-hour financial markets that have come into being.
- The great increase in financial transactions (as distinct from trade-related forex dealing), the predominance of capital flows, and the ease of changing the currency denomination of investments.
- The greater use of hedging instruments and the corresponding growth of currency futures and options markets.
- Speculative trading, also by big private operators, the day-to-day positioning by traders in the money center banks and "technical" trading and forecasting systems.
- Corporations treating their forex trading activities as a profit center.
- Political instability, "safe haven" investment.
- Economic and financial instability; destabilizing fiscal policies, wider divergence of growth and inflation rates.
- Varying degrees of "managed floating" of exchange rates and central bank intervention.
- Sharper interest-rate movements related to monetary targeting; divergent monetary policies.

— The foreign debt of countries without the ability to repay; "highly leveraged" countries.
— Diversification of reserve positions by monetary authorities.

27. Have the foreign exchange markets on balance gained or lost in terms of their breadth, depth and resilience?

While a majority (81%) observe growth, or greater breadth, in terms of the number of currencies and amounts traded, number of participants, trading hours, range of "products" and keener competition, some note a loss of resilience and greater risk to participants owing to volatile rates. The markets have also become thinner as well as more erratic and appear to be guided less by fundamentals than was the case in the 1970s.

28. Should governments attempt to dampen foreign exchange volatility? What effective techniques are available to them?

Opinions are evenly divided on whether governments should attempt to dampen exchange-rate volatility. If done by intervening in the market, this should be infrequent, well-coordinated internationally and carried on during periods of extreme instability "to punish the speculators." The success of the European Monetary System attests to the scope that exists for exchange-rate management on a regional basis.

Related techniques advocated to counteract volatility include: appropriate discount rate changes; managed floating with recognition of the fundamentals; drawing on credit lines between monetary authorities (swap networks); greater use of currency composites like the ECU; and import/export surcharges. (None recommends exchange controls). There is support for active daily participation by central banks in the market in order to add depth and so reduce volatility, and also to give central bank dealers a "feel" for changes in market sentiment.

Those rejecting intervention consider that the markets are too large for it to be effective and that the attempt to influence exchange rates often heightens uncertainty.

Many respondents make the point that governments should recognize exchange rates not as a cause of instability, but as the result of countries' economic performance, political environment and monetary and fiscal policies. Consistency in regard to the fundamental factors is in their view the only long-term way to more stable exchange rates.

29. Do you rely on signals given by technical models or on analysis of fundamentals (balance of payments, interest rates, money supply statistics) in the management of your foreign exchange exposures?

Just over one-third of respondents make use of both methods of analysis, relying on fundamentals for long-term commitments and on technical signals for the timing of decisions and identifying overbought or oversold conditions in the market. Some state they consider both, but do not rely on either; if the indications conflict, more weight is attached to fundamental factors. Market sentiment is also taken into account.

Another third of the replies is to the effect that only the fundamentals are analysed, as a basis for long-term investing and borrowing, but many of these firms keep informed of technical signals as well, for fine tuning and because "most participants follow the charts." To exclude one approach is to reduce the information available to decision makers.

For a few firms, technical models are a key tool in managing short term exposures. Technical analysis has increased in importance since the development of the futures markets. Some have lost faith in fundamental analysis, which appears no longer to apply to some currencies, or at least is unable to predict movements in the capital account.

Some made no attempt to forecast exchange rates, but confine their attention to identifying economic exposures and covering or hedging them.

30. Do you think that the growing use of technical models has had a significant impact on the foreign exchange market?

Most respondents think that the use of technical models has had a definite impact, mostly by making markets more volatile, at times one-sided, and by exacerbating trends. Because technical models have gained wide support, they have introduced new parameters in the market, which dealers cannot afford to ignore. There has also been an impact on turnover; trading is often triggered by the availability of information, and technical models appear to have built confidence among the believers, making them more inclined to trade. When a support level is penetrated, buyers disappear and sellers are forced to exaggerate the downward movement in order to find counterparties (and conversely for upper resistance levels). Were it not for technical analysis, business would proceed more evenly.

Others see only a slight impact of technical models, less than the effect of economic indicators and the psychology of the market.

About one-third of the replies attribute no effect to technical models.

3. Report on replies from international fund managers

This, the third part of the survey, polls the views of international money managers, comprising a varied group of trust funds, institutional investors and advisory services (including London merchant banks), who are faced with foreign currency decisions as one aspect of their international portfolios. Returns were received from seventeen firms, out of thirty-one approached, nine in the United Kingdom, five in the United States, two in Switzerland and one in Hong Kong.

1. Which of the following best describes your organization?

Several respondents classified their business under more than one of the descriptions listed in the questionnaire, and the following distribution resulted:

	%
Bank trust department	21
Securities house/broker	8
Insurance company	4
Mutual fund/unit trust management	13
Private accounts	17
Other	37
	100

The classifications given under "Other" include:
Investment advisory service
Investment management company
Merchant bank
Institutional portfolio manager
Money manager, specializing in short term speculative trading.

2. Please indicate the total amount of funds under management by your firm.

Reported in US$: $47,096 million
Reported in sterling: £42,900 million (approx. $60,000m.)
Reported in Swiss francs: SF4,000 million (approx. $1,720m.)
Reported as non-$ currencies: $1,418 million
Total: $110,234 million

3. What percentage of total funds under management is invested in foreign currency assets (i.e., assets denominated in currencies other than your "home" currency)?

a) **Available to be invested.** Not all firms answered this part of the question. Those who did reported percentages ranging from 0.4 to 100, with a median of 87.5%.

b) **Actually invested.** Percentages reported vary between 0.0045 and 97, with a median of 34%.

4. Have these ratios changed greatly since, say, 1979-80, and if so which were the main reasons?

62% of respondents state that the percentage of funds invested in foreign currency assets has increased appreciably and give as reasons the lifting of exchange control in the United Kingdom; the strength of the dollar (both as an attraction to investors and owing to the higher value of pre-existing dollar assets); the limitations of certain domestic markets; the growth, in the early part of the period surveyed, of OPEC surplusses; the more favorable outlook for a variety of foreign investments; and the widening international client base of fund managers.

The 38% of firms which report no significant change had already diversified internationally in the 1960s and 1970s. These include respondents from Switzerland and Hong Kong.

5. What percentage of international assets is presently invested in the following currency denominations?

	Median %	Range %
US$	50	0-60
DM	11	7-20
Swiss franc	5	2-20
Yen	25	12-50
Sterling	8	5-80
Other	10	5-45

The "other" currencies comprise those of the Pacific Basin, Canada and Europe not listed above. One firm has 5% of its assets in gold. UK fund managers hold from 45% to 60% of their international investments in dollar-denominated assets, while Swiss funds hold 30%-35% in dollars, with correspondingly more in DM assets.

6. Have you now achieved your desired degree of currency diversification? Or do you expect to continue to increase the proportion of foreign currency assets in your portfolio over the medium term?

73% of the respondents are satisfied with their present currency diversification, barring fundamental changes in the individual markets or in client business. Others expect a further increase in foreign currency assets, partly in response to new business.

7. Please indicate what percentage of your internationally diversified funds is invested in the following types of security.

	Median %	Range %
Stocks	55	14-100
Corporate bonds	7	2-20
Government bonds	17	2-40
Eurobonds	13	2-43

One fund holds 90% of its assets in cash, and another 5% in gold.

8. In what currency is your performance measured? Alternatively, how are your liabilities distributed?

Many funds have liabilities in more than one currency and measure their performance also in more than one. The distribution of the currencies so used is the following:

	%	
US$	46	
DM	4	
Swiss francs	9	
Yen	4	
Sterling	33	
Other	4	(HK$, A$, NZ$ and S$)
	100	

9. What criteria do you use to measure performace?

	%
Stock indices	38
Total returns	55
Other	7

The stock indices used include the Capital International World Index, the Financial Times Ordinary and All Share Indices, Standard & Poor's 500, and various local market and global bond indices. Other performance standards applied are the inflation and money market rates for the currency involved and comparative ratings supplied by consultants.

10. Do you separate currency risk from market risk?

	%
Yes:	94
No:	6

11. If so, what mechanism do you use?

	%
Forward contracts	43
Options	30
Futures market	17
Other	10
	100

12. How would you describe your hedging policy?

Fund managers implement changing views on currency prospects by selective hedging of both stock and bond investments — the policy of 70% of our sample. Only 15% do this seldom and another 15% not at all. The rating is the same for stocks and bonds.

13. How do you weigh currency risk against market risk?

	%
Greater	11
Less	39
Do not separate	23
Other	22
	100

Others regard the two risks as equal or of varying relative importance over time.

14. Has your evaluation of currency risk changed in the last two years? If so, has this affected your investment strategy?

Just over half (56%) of respondents have changed their evaluation of currency risk and have adapted their investment strategy in one or more of the following ways:

- Base decisions on the assumption of continuing high volatility of exchange rates;

- Give greater weight to the possibility of currency re-alignment, including caution as to the high value of the US dollar;
- Manage investments more actively;
- Seek more diversification;
- More hedging; and
- Reduce position limits and widen the stop loss points in short-term trading.

15. Do you make currency decisions more frequently than foreign investment decisions? If so, has there been a change in the frequency in the last two years?

Only 18% of respondents make currency decision more frequently than investment decisions, but some have increased the frequency of these decisions in the past two years.

16. What is the average time horizon of your individual foreign investments? Has it changed in the last two years?

Every respondent gave a different period, from "three-to-twelve months", and "up to five years". For the whole sample, the average time horizon is between one and three years. Only one firm has adopted a much shorter perspective in the last two years. Another reported that this depended entirely on how long it took for the investment objective to be achieved, or for circumstances to change.

17. How many times have you changed your currency exposure significantly in the past twelve months?

27% have done so once, 20% twice, and 7% each three, four, five and six times. No change was reported by 13% of firms, while 12% changed their currency exposure "several times" or "hundreds of times."

18. What is the average time horizon for your currency decisions? Has it changed in the last two years?

Periods reported vary between three months and two years, with an average of approximately four to twelve months. As in question 16, only one firm said that it had shortened its time horizon.

19. Would you describe your thought process in anticipating currency movements as:

	%
Fundamental:	59%
Technical:	30%
Other (Market sentiment, "feel"):	11%

20. In your view, what effect has the trend towards international diversification of fund portfolios in recent years had on the exchange markets?

76% consider that the effect has been more volatile exchange rates. The remainder see no connection — volatility being a function of other types of capital flow — or no significant effect, or one that is impossible to estimate; or they regard the two trends as having merely coincided.

21. On balance, has greater exchange rate volatility had a positive or negative effect on your overall rate of return?

60% rate the effect as negative; 33% as positive; and 7% as neutral.

22. As part of an internationally diversified portfolio, and in view of the growing interest in "emerging" securities markets, would you contemplate selective investments in developing country securities over the longer term?

The great majority of respondents state that they would consider such investment, and many had LDC paper in their portfolio. The instruments listed in the question are preferred by fund managers in this order:

1. Domestic stocks and bonds listed on local stock exchanges;
2. Off-shore funds (e.g., Korea Fund);
3. Stock issued in international markets (e.g., American or European Depository Receipts),
4. Bonds issued in international markets; and
5. Private placements.

In the case of *stock* investments, the following securities markets were mentioned: Singapore, Korea, Philippines, Malaysia, India, Brazil, Mexico, Spain, Greece, Thailand and Taiwan. For *bonds*, the range of countries is much wider and encompasses virtually every country in the world, including the Soviet Union and Papua New Guinea.

A few fund managers evince little interest in the emerging markets, either because their resources are too small, or in view of the conservative outlook of their clients.

23. Please indicate in order of importance the influence of the following factors on the construction of your international portfolio.

The nine decision elements listed in the question were ranked by respondents in the aggregate in the following order, though with considerable individual variation.

1. Individual stock prospects
2. Currency risk
3. Political risk
4. Industry prospects
5. Foreign market size/liquidity
6. Fiduciary duties or other responsibilities/limitations
7. Foreign auditing standards
8. Foreign market efficiency
9. Tax considerations

Other considerations mentioned were the foreign market risk and the requirement that the foreign investments must offer opportunities unavailable in the domestic market.

24. Would you welcome a greater commitment by governments to stabilize exchange markets?

Such a commitment would be welcomed by 56% of the respondents, with the proviso made by some that this be done without overregulation and controls, or only in the sense that exchange rate signals be given more weight in policy formulation. Opponents include those who look to profit from deviations of the exchange rate from its fundamental value.

25. If so, should this be attempted mainly by:

a. Harmonizing monetary and economic policies: 73%
b. Intervention in the markets: 9%
c. Both of the above: 18%

(The percentages refer to the number of those who, in reply to the preceding question, favor official stabilization efforts.)

26. Do you expect such attempts to be made?

Yes:	69%
No:	31%

27. If so, do you expect them to succeed?

No, or only occasional, success is foreseen.

Publications

Study Group Reports:

Toward a Less Unstable International Monetary System
The Reserve Assets Study Group

Foreign Exchange Markets Under Floating Rates
The Exchange Markets Participants' Study Group

Balance-of-Payments Problems of Developing Countries
The Capital Movements and the Growth of International Indebtedness Study Group

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The Capital Movements and the Growth of International Indebtedness Study Group

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H. Johannes Witteveen

Other Publications

The Mexican Rescue
Joseph Kraft

Books

Managing Foreign Exchange Risk
Edited by Richard J. Herring,
Cambridge University Press, 1983.

Managing International Risk
Edited by Richard J. Herring,
Cambridge University Press, 1983.

Based on essays and perspectives presented at a conference entitled "Managing international risk," held in Philadelphia, Oct. 26–27, 1981, sponsored jointly by the Global Interdependence Center, the Group of Thirty, and the Wharton School, University of Pennsylvania.

Publications are available for a charge or by subscription.

Address inquires to:
The Group of Thirty
725 Park Avenue
New York, New York 10021
(212) 988-5544

R5025-1.16-F

Countertrade in the World Economy

Robert V. Roosa

Thomas R. Atkinson
Michael Casey
Ronald J. DeMarines
Thomas McVey
Michael Morrison
Carmen Suro-Bredie
David H. Swanson
David B. Yoffie

Edited by Robert Pringle

Published by
Group of Thirty
New York
1985

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Preface

Since its inception in 1978, the Group of Thirty has been identifying as guides for its own work those aspects of the international economy that have been relatively neglected or inadequately studied. This group of economists, bankers, businessmen, and former or present Government officials, from industrialized and developing countries, has been particularly concerned with the functioning of the world's monetary and trading systems. Attention has been focused on developments or proposals which may promote, or possibly impair, economic growth, globally or in particular countries. The Group's appraisals have recently taken special note of the resurgence of barter trade in various guises, all embraced in the common term, countertrade.

How important has this phenomenon become within the total pattern of world trade? What have been its motivating forces? Is it likely to persist and expand in significance? What are its implications for the GATT system of freer trade, and for the premise that multilateral free trade offers the promise of an optimum international division of labor and maximum growth for all?

Pursuing its now established procedure of commissioning preparatory analyses by selected groups of experts, as a basis for its own further deliberations and recommendations, the Group of Thirty formed a small study group on countertrade. Initial exploration disclosed that the firm of Business International had already prepared an extensive manual or guidebook for the use of any of its member companies that might be interested in considering prospects for countertrade in particular commodities or particular countries. In addition, a preliminary survey revealed that the US International Trade Commission, reflecting the same degree of inquiring interest, had initiated an extensive survey of companies within its jurisdiction.

Consequently, while drawing upon these sources as they became available, the study group turned its effort in a complementary direction.

The papers included in this publication, which the Group of Thirty is making available as a concomitant of its own work, have been prepared by members of its study group and other experts representing a selected cross-section of various kinds of exposure and experience in countertrade. Three meetings of available experts were held at two-month intervals, culminating in a consensus that papers drawing on the discussions, and reflecting differing points of view, would make a useful addition to the information that was already available.

During the study, the group has generally assumed that countertrade will probably continue to be a substantial factor in trading relations among the COMECON countries and between those countries and the rest of the world. The main focus of the work of the study group has consequently been on the rest of the world, excluding China and other command economies.

Robert Pringle
Executive Director
December 1985

Countertrade in the world economy

Robert V. Roosa

Robert Roosa, a partner in Brown Brothers Harriman & Co. and chairman of the study group on countertrade, suggests that countertrade will remain as an aberrant feature of the multilateral trading system. At a time when that system is under acute stress from many more deep rooted forces, it can play a limited and temporary but useful role.
The material incorporated in this article has been prepared by Charles Abrecht, Harry Adamopoulos and Robert Pringle.

While the major countries are opposed in principle to countertrade because it represents a partial retreat from the multilateral, open trading system set up after World War II, it has become an established and growing practice. This introductory chapter examines the marginal role played by countertrade in world trade at present and highlights some of the causes of its recent growth. Drawing on the discussions of the study group on countertrade, and the other papers presented in this volume, it also considers some implications for the international trade and monetary system.

Ominously, the origin of many modern CT terms can be traced to the inter-war years, and in particular to Hjalmar Schacht, President of the Reichsbank under Hitler. Schacht resorted to "countertrade" because some of the underdeveloped countries at the time, notably in the Balkans, were faced with acute liquidity problems, and were unable to pay for German goods, while Germany wanted their raw materials. A clearing system was established which permitted the countries to settle their net position once a year in hard currency or gold.* The term "compensation," used to

* After the war and his release from imprisonment by the Germans (he was cleared at Nuremberg but sentenced by a German court), Schacht used to compare these schemes with the bilateral payments agreements negotiated by Britain during and after the war. The late Fred Hirsch asked him at a press conference in 1954 whether there might not be some difference, in that his agreements were used by Germany to sell dear and buy cheap. Mr. Hirsch recounts his response:
"'No, the reply came back slowly, "No, we paid those countries good prices. In fact" and now Schacht's eyes hardened, his voice rose and with a thump on the table he was back in the Balkan negotiating room' — *'in fact we paid them too much!'*" (Italics in original)
Money International, by Fred Hirsch, The Penguin Press 1967 (Pelican Books edition, 1969, page 264).

describe many forms of countertrade, derives from the German word *Kompensationsgeschaeft*, as such clearing operations were called in the 1930s. Another common term for those transactions is *Gegengeschaeft*, which translated into English literally means countertrade. (A glossary of terms appears on page 12)

Trade discrimination was widespread for several years after World War II. Having no other way to preserve hard currency reserves, countries maintained bilateral trade and payments agreements. In 1948, within the framework developed by the Marshall Plan, trade among the European countries was regulated by some 200 bilateral agreements, which governments carried out largely by means of quantitative restrictions on imports. At the same time, the communist countries adopted the pre-war German form of trade and applied it to trade among themselves and with developing countries. Even today, inter-Comecon trade is largely regulated through clearing agreements similar to those devised by Schacht.

The magnitude of countertrade

Recent official studies have helped to illuminate this somewhat unusual aspect of international trading practices and the extent to which these practices have spread from eastern Europe, to which for many years after the war they were largely confined, to other parts of the world. They are the recent OECD study entitled "Countertrade — developing country practices," a study by the GATT secretariat and the survey of 500 US corporations by the International Trade Commission published in October, 1985. We have relied heavily on these reports in compiling our own estimates of the overall magnitude of countertrade.

A view from the OECD

The OECD's "maximum estimate" for the value of world trade in 1983 in the form of countertrade is about $80 billion or approximately 4.8 per cent of world exports. This estimate, which excludes trade within the Comecon area, is made up as follows:

Countertrade in the trade of:

Industrial countries with	*$ billion*	% *of trade involved*
East Europe	15.6	15
Oil exporters	4.3	2
Other LDCs	16.6	5
Among each other	15.7	2

Developing countries with	*$ billion*	*of trade involved*
East Europe	14.2	30
Among each other	12.5	10
Total	79.0	4.8

Source: The table is derived from *Countertrade: developing country practices*, OECD, Paris, 1985, pp. 11-12

Market observers question, however, whether these estimates take full account of the growth of countertrade among industrial countries and between them and developing countries, including oil exporters. The OECD states that although there have been "rumors" of requests for compensation in respect of ordinary trade transactions among OECD countries, the Secretariat has not been able to verify them. The bilateral transactions between OECD countries that contain elements of countertrade occur in specific sectors, notably trade offsets in sales of aircraft or military equipment, and barter of strategic raw materials. But these types of arrangement may have been growing more rapidly than the OECD allows. The survey of the US International Trade Commission reported later in this article shows that in 1984 nearly 6 percent of US export sales were linked to a countertrade transaction, suggesting that the OECD's estimate of 2 percent for countertrade among industrial countries is too low.

The OECD maintains that it would be "surprising" for there to have been any large-scale expansion of countertrade among OECD countries in the recent period, partly because OECD governments do not encourage it and partly because the share of intra-OECD trade carried out through government purchases is fairly low. Only two member countries — Australia and New Zealand — incorporate elements of countertrade in their trade policies with official guidelines as to how they should be applied.

The OECD justifiably pours cold water on some of the more extreme claims for countertrade in OECD-LDC trade. It states that about 50 LDCs have displayed or may have displayed interest in countertrade in recent years but the secretariat could find 20 countries "at most" where specific instances of countertrade transactions actually negotiated or implemented had been reported. The bulk of the countertrade practiced by developing countries takes the form of "commercial" compensation for routine exports where the unit value of the contract is fairly small and the transaction is completed within 36 months.

According to the OECD, most LDCs hesitate to give official status to

their countertrade demands and participate in an *ad hoc* manner; only two countries — Yugoslavia and Indonesia — have established an official policy incorporating general regulations on countertrade, and only three or four others have laid down regulations providing for it in some circumstances, while not making it mandatory. Governments generally confine it to a limited number of firms or agencies — or to transactions under direct government control — partly for fear that private firms may use it to cover under-declaration of imports or over-declaration of exports so as to make illicit capital transfers. The OECD acknowledges, however, that one should not rule out the possibility that the developing countries may be allowing a parallel trading system to evolve, one which would provide a marginal alternative when exports do not progress as planned or face particular difficulties in penetrating certain markets. This is believed to be the first time that a report by an international agency has acknowledged the significance of countertrade, instead of just disapproving of it.

From the GATT

The GATT study puts an upper limit for the proportion of countertrade in world merchandise trade of 8 percent — while stressing that the actual proportion could be considerably smaller. The estimates again exclude trade flows occurring under bilateral payments arrangements within Comecon and among some developing countries (including these would add some 5½ percent of world trade to the total).

In its commentary, the paper stresses that foreign exchange shortages *per se* do not provide a sufficient rationale for countertrade. As long as (a) export supplies are available — as eventually they must be if barter is to take place — and (b) a foreign supplier is willing to accept these goods in payment, then it follows that those exports could also be sold for cash, or used to secure a loan, which can then be used to purchase imports. The causes of countertrade are rather to be found elsewhere: notably, in a desire to avoid local foreign exchange controls, to effect a *de facto* devaluation or to undercut a cartel price.

— and the ITC Survey

The ITC surveyed more than 500 US corporations accounting for more than 60 percent of total US merchandise exports.

Some of the major findings are:

1. In 1984, $7.1 billion or 5.6 percent of the export sales of the companies surveyed involved countertrade obligations; 80 percent of the sales involving countertrade were of military equipment. Both the total sales linked to countertrade and the associated countertrade obligations

fluctuate widely from year to year. Shipments of US exports associated with non-military countertrade increased fourfold from $285 million in 1980 to $1.4 billion in 1984.

2. US imports arising from countertrade obligations (including military offsets) accounted for an insignificant share of total US imports — 0.1 percent in 1984. (Countertrade imports to the United States account for only some 20 percent of total countertrade obligations; other goods are either sold abroad, absorbed by foreign affiliates of US companies or sold to a trading company). Half of US imports resulting from non-military countertrade were accounted for by Eastern Europe.

3. Developed, free-market countries are the major countertrading partners of the United States, both in military and non-military exports. In 1980-84 NATO countries, Australia and Canada accounted for a large percentage of the total face value of countertrade sales agreements. Transactions with Israel, Saudi Arabia, China, Indonesia and the Philippines also increased rapidly during the period. Latin American countries played only a minor role in the expansion of US countertrade, even though these countries were among the most active in promoting countertrade activities. This is partly because their rapid expansion began toward the end of the period surveyed and partly because the bulk of their countertrade has been with countries other than the United States.

4. Countertrade has been practiced most extensively in high-technology industries, notably aerospace, where about a quarter of all exports carry countertrade obligations.

5. Almost half of the goods and services imported under non-military countertrade were used internally by US companies that were parties to the countertrade sales agreement.

6. More than one half of US countertrade agreements stem from the insistence of foreign governments. However, companies sometimes engage in it to gain a competitive advantage or maintain market share.

7. A majority of respondents believe that their countertrade activities produce net benefits overall, in terms of increased employment, sales and productive efficiency. According to the report, countertrade has not adversely affected the competitiveness of the US companies surveyed, both those engaging in countertrade and those that are not, though some respondents expressed concern over the potential impact on their businesses.

Reviewing the main findings of these studies, along with other sources and estimates, we would hazard an estimate that for the countries associated with the GATT, or aiming toward ultimate performance according to GATT principles, countertrade accounts for between 8 and 10

Why the Fund disapproves: —

"Although the volume of trade conducted under countertrade arrangements appears to be small in relation to world trade, the proliferation of such practices is detrimental to the maintenance of the multilateral system of trade and payments. Countertrade practices may entail many of the undesirable restrictive and discriminatory practices traditionally associated with bilateralism. Where countertrade practices result from a direct governmental limitation on the use or availability of exchange as such, they entail exchange restrictions and multiple currency practices that may be subject to approval under Article VIII of the Fund's Articles of Agreement."

"Even though countertrade practices may be viewed as having some advantages, such as access to restricted markets, or in some circumstances implicit valuation of exports at a more depreciated exchange rate, they have a number of shortcomings. Apart from the basic issue of inefficiency of resource allocation, some of the more common serious disadvantages generally encountered are: (1) a limited choice of products or services that are available for trading at internationally competitive prices; (2) poor quality of goods; (3) the difficulty of marketing products that are not directly consumed by the buyer, especially when the seller places geographical or commercial restrictions on the marketing of products; and (4) a higher product cost resulting from payments of commissions or fees to the middleman handling sales of products and from bridge financing that may be required owing to long delivery dates. Countertrade arrangements also tend to increase the cost of trade, as additional risks not usually present in normal bank-financed foreign trade must be covered."

"The use of countertrade has been proposed in some quarters as a means by which countries with high debt service problems can improve their trade balances through access to markets where these are otherwise restricted. Such an approach might offer temporary access to markets for these countries. But, it is a second-best solution when viewed from the system as a whole; a far better alternative is for all countries concerned to reduce their level of protectionism. When countertrade is advocated because of the absence of trade financing arising from fears of nonpayment, the best response would seem to be official action to promote the normal trade financing mechanisms and to restore confidence in the management of the economy."

Reprinted from: *Exchange Arrangements and Exchange Restrictions*, Annual Report, IMF, 1985, pp. 41-42.

percent of all external trade in the mid-1980s. This is higher than the OECD estimate, and somewhat above the "upper limit" of the GATT estimate because we believe that their estimates do not fully take into account the spread of countertrading practices among both developed and developing countries nor the growth of military sales with associated "offset" obligations. Even if arms sales are only 2-3 percent of world trade, it seems likely that up to one half now involve countertrade practices — adding some 1 to 1.5 per cent to the total. Equally, while it is true that some of the much-publicized oil barter deals appear to have collapsed, others are being concluded and countertrading practices are being adopted or enlarged by an increasing number of developing countries, notably by China and India.

Some less-publicized causes of countertrade

The global developments which have been promoting the shift of trade in the direction of countertrade have included the distortions away from normal price relations among the market economies that have been brought about by the wide-swinging fluctuations in exchange rates that have occurred following the emergence of a floating rate system in the early 1970s. Such distorting influences, further aggravated by the increasing overvaluation of the dollar from 1980 to 1985, have tended to displace pricing in money terms with transactions based on the inherent exchange value of goods for goods. This was further exacerbated by the tendency of the less developed countries to maintain overvalued exchange rates in the 1970s and early 1980s as they pursued rigorous import substitution strategies. In addition, the sharp decline of the world economy precipitated by the US recession of 1981-82, as the United States underwent the harsh adjustment necessary to break an inflation momentum and bring US prices back down to a normally sustainable range, also introduced trading uncertainties. General economic slack through much of the world, with the consequent appearance of excess capacity (especially in commodities), helped precipitate trade of goods for goods. Along with all these factors, the accumulation of an overburden of indebtedness by developing countries, which culminated in the dramatic near default of Mexico in August of 1982, also added to the motivation of many developing countries for seeking countertrade deals.

In the broader terms of economic analysis, uncertainty or lack of confidence in relying solely on market demand or market availability may lead to arrangements through which specific imports can be assured and export markets realized, at implicit price relations which may involve some additional cost for both sides as their price for gaining the certainty of actual sales or purchases. In some instances, developing countries simply lack

information concerning possible outlets for their specialized products or would face very high transportation costs for shipments of their moderate size. In such circumstances the intermediation of a trading company, or negotiated purchases by a large multinational corporation aiming to make sales of its own products in the developing countries, may provide the access to markets or control over transaction and transportation costs that the developing country needs.

In still other circumstances, developing countries may find negotiated trade deals a necessary counterpart of projects that are governmentally planned or promoted; or countertrade may be used paradoxically as a concomitant of an LDC's participation in an IMF financing program. That is, imported goods obtained in effect through a direct exchange for a country's exportable goods would bypass the country's foreign exchange reserves and in that way minimize the accumulation of balances considered available for debt servicing. Or when undertaking a domestic austerity program at IMF insistence, a country may be able to conceal the direct impact of the IMF program by limiting imports to those essential products obtainable through countertrade.

An argument can be made that the techniques of countertrade, particularly as implemented through trading companies or large multinational concerns, can develop markets which would not initially be available to some developing countries if left to their own devices. This may be especially the case where a developing country wishes to attract long-term capital for the development of a particular productive facility, or the opening of a mine or the drilling of oil and gas wells. In circumstances requiring longer-term commitments of capital and development technology from the outside, developing countries may have to offer the prospect of ultimate repayment through the products to be produced.

From the multinational corporation's point of view, concerns in the aerospace and high-technology industries, for example, often find sales impractical in emerging industrial economies without accepting products of those countries in exchange, either directly or through trading companies or by entering into joint ventures with local firms. Just as the "infant industry" argument has gained acceptability through the years as a rationalization for the temporary imposition of protective tariffs, so also the use of countertrade may often provide the initial impetus for developments that may later become fully viable in a free trading world. Countertrade may also be used to circumvent existing restrictions and controls on the use of foreign exchange as well as concealing an availability of foreign exchange from international creditor banks. Such cases illustrate the diversity of practices that come under the heading of countertrade.

Impact on the global trading system

There was a general consensus within the Group of Thirty's study group that conditions of the various kinds just described were likely to recur from time to time on the fringes of the broader multilateral trading system. In periods of sagging economic activity around the world, or other kinds of political and economic uncertainty, the proportion of countertrading in the aggregate of world trade can be expected to rise. But as overall growth in the major economies is sustained at reasonably strong rates, the occasions for countertrade (except those deriving from very long-term commitments) may be less frequent. Moreover, even though the surge of countertrade has not been solely a transitory result of the debt crises among the developing countries, some tendency toward countertrade on the part of such countries will remain so long as conditions of over-indebtedness continue.

Even countries that are nominally oriented toward functioning as market economies may at times find it necessary to rely on economic planning for some segment of their activity. Countertrade may also appear attractive as a way of obtaining the capital for that contemplated activity. And when industries operating on a global scale reach a condition of general excess capacity and soft prices, some participants in the industry will be tempted to beat their competitors by finding assured markets through direct or roundabout barter deals, possibly at disguised pricing discounts. When countries or firms lack information on, or access to, potential markets, or face high marketing or transportation costs, they can be attracted by offers of help from multinational corporations interested in making sales within the markets of these developing countries.

On balance, while flurries of increased countertrading will undoubtedly recur for any of the reasons outlined in the studies, the writers differ as to whether countertrade seems likely to become a growing phenomenon as a lasting proportion of foreign trade. If the strength of the dollar gradually lessens, and if the leading countries find ways to reduce the fluctuations in foreign exchange rates, or the adequacy and distribution of international liquidity becomes more assured, the prospects for sustained growth throughout the world economy will improve. The commodity markets may then become more flexible and adaptable, and able to meet the marketing and purchasing needs of most countries through the normal procedures of the market place. If the capacity of major industries in the developed countries becomes rationalized to fit the sustainable needs for their products, many of the capital intensive multinational companies will have less overhead to cover and their urge for finding outlets through countertrade may diminish.

Viewed in this light, countertrade can, however, be expected to continue, in one form or another, as an aberrant feature of the GATT multilateral trading system. The products, the firms, and the countries engaging in countertrade will probably be a changing cast of participants in an activity that, while contrary to the spirit of the open trading system established after World War II, has a limited and marginal but helpful role to perform, in transitional circumstances, in the international trade and payments system. That system is indeed threatened by many powerful forces including the rising tide of protectionism, massive subsidies to many sectors of industry and agriculture, and many other non-tariff barriers. By comparison, countertrade is not at present a major threat to the system, at least while it remains limited and marginal. So long as all the participants take account of the true costs of engaging in countertrade — costs that are amply spelled out in the articles that follow — this way of conducting business can be seen rather as an unavoidable outgrowth of strains in the system resulting from deeper forces and as a way of maintaining trade in the face of growing uncertainty.

Glossary of Terms

A. *Barter:* Bilateral exchange of goods and services, without a cash transaction between the parties.

B. *Counterpurchase:* A exports to B (a private company or a foreign trade organization), and agrees to spend some of the proceeds by importing from B. Both parties pay for their purchases in cash (at least in part), but commit themselves, by signing a "protocol" contract, to fulfill the counterobligation over a specified period (1-5 years).

C. *Compensation and "buy back" deals:* A agrees to set up a plant or deliver technology equipment, training and other services with which to build and operate a facility in B's country, and accepts a percentage of the output of the plant as payment.

D. *Offset agreements:* This term is used where a country *requires* foreign suppliers to accept an obligation to purchase goods or services in that country up to an agreed percentage of the original sale.

E. *Switching:* The multilateral use of bilateral trade imbalances. Specialized countertrade houses typically buy from country A the value of its bilateral trade surplus with country B at a discount and sell it at full value to a company or country C, which happened to have a bilateral trade deficit with party A. The trading house will often have to take title to certain goods, which it then has to sell against hard currency.

What motivates countertrade?

David B. Yoffie

Professor David Yoffie, of the Harvard Business School, analyzes the forces behind the growth of countertrade during the past fifteen years and suggests that, while a period of sustained economic growth and a resolution of the debt crisis would lessen some of the pressures for countertrade, other motivations are likely to persist.

The logic underlying the recent growth in countertrade remains a mystery to most practitioners and government policy makers. Since money was invented to overcome the inevitable inefficiencies of barter, there would appear to be little reason for countertrade to exist. As long as there is a functioning international monetary system, international trade should be conducted on market principles. Yet in the real world, where markets are imperfect, there is a logic to countertrade: from a global macro-economic perspective, countertrade is a response to renewed uncertainty about the benefits of international trade, increased transactions costs, and rapid changes in global demand and in industrial structure. At the same time, there are compelling reasons for particular countries to adopt countertrade: under certain conditions, barter and barter-like transactions can increase a country's share in a global commodity market, hide foreign exchange earnings from creditors and help implement an austerity program.

There has been a tendency to explain countertrade as an outgrowth of the debt crisis, yet high levels of debt and inadequate liquidity do not in themselves cause countries to engage in it. Indeed, many nations that have demanded countertrade in the 1970s and 1980s, such as Canada and Indonesia, have not suffered from a lack of foreign reserves. And even when liquidity problems are severe, they can be overcome through macro-economic policy and exchange rate adjustments or by more direct mechanisms, such as import quotas or export subsidies and price discounts. Certainly, liquidity problems are often a factor, but the choice of countertrade as a tool which affects tens of billions of dollars of world trade has deeper roots.

The growth in global countertrade can be traced to the combined effect of five additional macro-economic factors and three country-specific factors.

Macro-economic factors

1. Lack of confidence in international trade

In the 1970s, after twenty years of virtual uninterrupted expansion, trade suddenly became erratic. In the decade leading up to the first oil crisis, the volume of world exports increased every year at an average annual rate of 8.5 percent; in the following decade, the volume of international trade swung between a low of negative 3.0 percent to a high of 11 percent, averaging less than 3.5 percent.[1] The early 1980s were an especially difficult time for international trade. The deep global recession of 1981 and 1982, wide swings in currencies, surplus capacity in many industries, the restructuring of third world debt, and problems associated with exchange rate fluctuations, everywhere increased demands for protection.[2] Highly divergent trade performances — the huge deficits of the United States and some European countries compared with the enormous surplus of Japan — exacerbated the pressures for trade barriers.

Although the types of restrictions employed by national governments vary greatly, two trends are especially important. First, governments have resorted increasingly to non-tariff barriers, such as voluntary export restraints, domestic subsidies, and more rigorous implementation of anti-dumping laws and countervailing duties. The political and legalistic character of these restrictions have heightened uncertainty in trade relations relative to the past.[3] Second, there have been growing demands for reciprocity in international trade. Going beyond requests for equal tariff treatment, some governments instead have demanded equal trade *results*. In the United States alone, more than 30 bills in the 97th Congress demand reciprocal access to foreign markets, usually measured by relatively equal bilateral trade balances — and since countertrade links imports to the export of goods and services, it is one of the strictest forms of reciprocity.

Thus the belief that the benefits of international trade are less certain and perhaps less equitable than in the 1950s and 1960s has spurred a global examination of reciprocity and countertrade. Countries which perceive unequal access to foreign markets, foreign protectionism and/or unfair trade practices, rationally view countertrade as one mechanism to reduce the uncertainty and redress the inequalities of the international trade system.

2. The search for new markets

The diversification in developing countries' exports away from traditional goods, such as food, beverages and tobacco, towards labor-intensive manufacturers such as textiles and footwear, and nontraditional

manufacturers, such as machinery, electronics, and processed goods[4] has also stimulated interest in countertrade.

Exporting manufactured goods requires that a country obtain information, which may be very costly, and overcome a variety of barriers to entry, such as complex distribution channels, advertising and brand labeling.

Yet the cost of creating distribution networks from scratch while remaining competitive is prohibitive for many nations. So many of them have looked to the global networks and channels of operations maintained by multinational corporations as a way of reducing transactions costs. These firms also have information systems that can provide market intelligence for many product areas, and they have a myriad of suppliers and buyers that can be called upon to buy a wide variety of goods. One scholar estimated that as much as 25 percent of world trade takes place within multinational corporations, and perhaps 48 percent of all imports into the United States originated with a seller that was related by ownership to the buyer.[5]

In addition to internal networks of multinational manufacturers, countries may also turn to professional traders such as the Japanese sogo-shosha, Phillipp Brothers, Cargill, and Continental Grain. According to a study done for Sears World Trade by the Strategic Planning Associates, major private trading companies, petroleum traders, and Japanese trading companies accounted for 40 percent of world trade in 1983. If countries can utilize these professional trading networks, then the transaction costs of international trade can be reduced further.

Two examples of corporations that helped lower international transaction costs are McDonnell Douglas and Northrop Corporation. In the 1970s, both used their corporate networks to assist foreign exporters in finding new markets. By relying on their international contacts, these companies could reach buyers in distant markets at lower costs than small exporters. When Northrop found new markets for $130 million in Swiss products as part of the sale of F-5s, it used its international networks to locate prospective buyers that small Swiss manufacturers had previously ignored. Similarly, when Douglas Aircraft marketed Yugoslavian goods in the 1970s, it had immediate access to prospective customers through its relationship with suppliers and affiliates. Since the Yugoslavs had no brand or name recognition, they faced significant barriers to entry: without a track record, they had difficulty opening corporate doors. Yet once Douglas Aircraft sponsored their sales efforts, it significantly reduced their transaction costs for penetrating the American markets.

Hence, countries that view high transaction costs as a significant

barrier to entry to new world markets have an incentive to enlist the aid of large multinationals and professional traders. These countries choose countertrade requirements for this purpose because countertrade is one of the most potent tools available for pressuring multinational corporations. By linking access to a domestic market to a company's ability to expand export sales of particular products, the countries can target their policy directly towards multinational corporations and professional traders.

Countertrade, however, has costs for both the company and the country. Whenever possible, a corporation would prefer cash sales without strings attached. Countertrade will never be the most desirable solution for the multinational, and it is a solution which is acceptable only if the company can increase the price of its products to cover the transaction costs involved in marketing countertraded goods. This means that countries will also incur costs by using countertrade, since they will generally have to pay higher prices for imports than under a free trade regime. If the multinational builds the price of performing countertrade into the countertrade contract, importing sectors in the economy will be subsidizing exporting sectors.

This raises an important question: under what conditions will companies and countries be willing to incur these costs? To answer this question, one must examine the structure of global industries that might be subject to countertrade, and the supply and demand for particular products.

3. Global supply and demand

Excess capacity in many industries whose products enter international trade combined with soft commodity prices for many traditional exports of LDCs may well be the decisive factors in the resurgence of countertrade.

In a seller's market, a corporation will generally avoid the complexity and costs of countertrade and find alternative outlets for its goods. Historically, firms in industries like computers rarely engaged in countertrade. Such high growth industries have been characterized by excess demand, which allowed companies such as IBM and Digital Equipment to sell their production without resorting to extraordinary measures. Even in non-sellers markets, if a company has a particularly strong position in its industry, the individual firm may face excess demand and thereby avoid countertrade. For instance, Boeing through the early 1980s had a rigid policy of not engaging in any countertrade worldwide. Its position as a world leader in commercial aircraft allowed it to avoid countertrade requirements that smaller producers, like Douglas Aircraft, could not escape. Companies in industries characterized by global excess capacity, however, such as automobiles, aerospace/defense, nuclear power generation and farm

equipment, will naturally be more inclined to accept requests for countertrade. In a buyer's market, firms will bid more aggressively for business, especially in capital-intensive industries where there are high fixed costs and maintaining volume is critical for survival. Although countertrade may still be a second best option, multinationals will be more willing to accept some additional costs, if for no other reason than to cover their overhead.

The large majority of countertrade deals have been in industries characterized by surplus capacity. For instance, some of the American firms most actively involved in countertrade over the past five years have been General Motors, General Electric, McDonnell Douglas, and General Dynamics. Each of these firms is also competing in industries that have been suffering from slow or negative growth and intense competition. In the bidding war for a $5 billion defense contract in Turkey, General Dynamics had to include substantial countertrade concessions in order to outbid its American competitor, Northrup Corporation, as well as several European competitors. Similarly, General Electric has incurred countertrade obligations since 1982 in Canada, Spain, Sweden, Romania, Brazil, and other countries for amounts ranging from one million to 700 million dollars. All of these obligations were associated with the sale of products such as jet engines and turbines where GE confronted stiff competition and few alternative outlets for its goods.

From the point of view of the importing countries, their willingness to act will be tempered by the costs of countertrade. Since firms try to raise their prices or reduce their discounts to cover the costs of marketing countertraded goods, the importing government has to decide under what conditions the benefits to the exporting sectors will outweigh the costs to the importing sector. Here again, the decision to engage in countertrade will depend upon the international market conditions confronting the particular economy.

4. Depressed commodity prices

The conditions which most favor the emergence of countertrade are when a country's traditional exports face stiff competition and depressed prices in world markets. When a country is running a strong positive balance on its current account, the incentives for countertrade will be low. Importing sectors will generally balk at subsidizing exporting sectors. If the current account deteriorates, however, importers will be less able to resist countertrade policies. Especially when a country confronts a buyer's market for its major exports, a government will be more inclined to incur the costs of countertrade to expand its export base.

Commodity exporters, in particular, have few recourses to improve the

balance of trade when commodity prices are depressed, as so many currently are. The most obvious tool to push their commodities onto world markets is to lower the price. Yet in well-organized markets, such as copper or grain, any discount from prevailing market prices will be immediately matched by other producers. Moreover, open discounting is prohibited by cartel arrangements in several commodities markets, most notably in oil.

This dilemma can be solved in the short run by using countertrade. Since a multinational company increases its prices when it engages in countertrade, it builds an extra margin into its contract that can be used to subsidize countertraded products. In essence, this margin becomes a discount on the country's exports. While everyone recognizes that countertrade produces a discount, the size of the discount remains hidden. If the multinational's export is a manufactured good, the "true" market price will always vary with the product's features and quality. Unless the precise specifications of the goods are made public, no one will know how much of a premium the importer paid for the manufactured exports and how much the manufacturer subsidized the countertraded products. This process of hidden discounting is most easily seen through an example. In 1984, Saudi Arabia traded 34.4 million barrels of oil for 10 Boeing 747s. Since 747s can vary considerably in price, depending on several factors such as instrumentation, it is impossible to know the exact market value of the planes. As a result, it is equally impossible to know the precise market value that Boeing was charged for the Saudi oil. Since the oil market was severely depressed in late 1984, Boeing would not have taken the oil unless its effective prices were below official OPEC prices. Yet whether it was a five, ten, or fifteen percent discount remains hidden.

The Saudi deal exemplifies how the combination of a buyer's market for manufactured products and a buyer's market for a country's traditional exports can produce the coincidence of needs required for countertrade. Boeing, facing depressed demand for aircraft in 1984, needed sales; Saudi Arabia, facing depressed oil prices and a deteriorating trade balance, needed to expand exports without triggering a price war. Countertrade was the consequence. And this logic extends well beyond this one deal: as much as 25 percent of OPEC production may have been involved in countertrade in 1984.[6] Several of the largest Japanese sogo shosha have bartered approximately $1 billion each with Iran in 1983 and 1984;[7] in January of 1985, Thailand bartered one million tons of rice for Malaysian, Nigerian and Iranian crude;[8] and there have been many other documented oil deals, though some of these may not be completed in view of the sharp fall in the oil price.

5. Beggar-thy-neighbor policies

Once one country imposes countertrade requirements, there has to be a fall in the commodity's price, or other countries will also have to resort to countertrade. A deal such as the one arranged by Saudi Arabia serves the purpose of increasing the amount of Saudi crude on world oil markets, but it does not expand the demand for oil. It merely forces the buyer (Boeing and its agents) to buy Saudi crude rather than Libyan, Kuwaiti, or Iraqi crude. However, the Saudi deal places Libya, Kuwait, or Iraq, in a quandary. If some countries impose countertrade, and other countries do not, multinational corporations or foreign governments will inevitably switch their purchases of oil from countries that do not give discounts (i.e., require countertrade) to countries that do.

This beggar-thy-neighbor phenomenon explains what has happened in the oil markets in 1983 and 1984, and it also explains the spread of countertrade requirements throughout South East Asia since 1982. In December of 1981, the Indonesian government imposed one of the strictest counterpurchase regulations by a market economy since the 1930s. Starting in January of 1982, the Indonesians mandated that all foreign sales to the government that were greater than $775,000 (US) would be subject to a 100 percent countertrade requirement. At the time, the Indonesian government was planning to import between three to five billion dollars per annum. In addition, the countertraded goods were supposed to go to new markets or be above historical levels to existing markets; and failure to comply would subject the company to a 50 percent penalty. Indonesia excluded oil from allowable products for countertrade, but included a variety of goods, such as rubber and wood, that were in direct competition with their ASEAN partners — Singapore, Malaysia, the Philippines and Thailand.

When the Indonesian government started to implement their countertrade policy, they were soon disappointed. They discovered that it was nearly impossible to verify if exports were going to new markets. The Indonesians nonetheless continued the policy in the hope that multinationals would help Indonesia expand its export base. For the companies that submitted countertrade proposals to the Indonesian government, the easiest way to fill their commitments was to switch their purchases of certain commodities, like rubber, away from Malaysia and other ASEAN nations, to Indonesia. By the end of 1984, Indonesia had signed more than $1 billion in countertrade obligations, and approximately one-half of the obligations had been fulfilled.

Indonesia's modest success with countertrade created a severe dilemma for other ASEAN nations: since Indonesia was stealing market shares in particular commodities, several ASEAN nations decided to impose their own countertrade requirements. Malaysia started to promote countertrade for selected contracts since the middle of 1983. It generally asked exporters for 100 percent counterpurchase, but in some cases the government has demanded even greater than 100 percent countertrade. Two subsequent deals exemplified the beggar-thy-neighbor phenomenon: in a $50 million deal with South Korea, Malaysia imported patrol boats in exchange for petroleum, timber products, and palm oil; and in a smaller deal with Yugoslavia, the Yugoslavs took tin and rubber.[9] These products, (except for oil), were among the major countertrade products listed by Indonesia. Thailand and the Philippines have also negotiated an increasing number of countertrade deals since the Indonesians' entry into countertrade.

Country-specific factors

The macro causes outlined above explain why countertrade has become a global phenomenon in the 1980s. Beyond this macro explanation, however, there are country-specific reasons for a government to employ countertrade, even when the macro conditions do not exist. Three reasons appear to be especially important: 1) countertrade as a planning tool; 2) barter as means to conceal foreign exchange earnings; and 3) countertrade as a way to hide austerity.

1. Planning

Throughout the 1960s and 1970s, countertrade was continually used by Soviet bloc nations. Most governments in eastern Europe hold individual ministries responsible for their imports and exports and for achieving a specified balance of foreign reserves. Since the central government sets yearly targets and controls the exchange rate, ministries cannot wait for the international market to clear: they must plan imports and exports in order to achieve their specified goals. While imports are easily controlled through centralized purchasing and protectionism, exports are much harder to plan. Countertrade solves this dilemma by requiring firms that export to the centrally planned economy to buy an equivalent amount of goods.

Countertrade can also facilitate a government's long-term planning. If a government wants to insure employment in a particular industry and at the same time guarantee the supply of important imports, long-term countertrade contracts can provide that assurance. The most celebrated example of this type of contract is Armand Hammer's 1973 fertilizer deal

with the Soviet Union. Over a 20 year period, Occidental Petroleum promised to export to Russia an average of $1 billion worth of fertilizer per year, and buy $1 billion of Russian ammonia. The deal reported included some cash payments, but most important, it provided guaranteed markets for both parties.[10]

2. Concealing export earnings

During the debt crises of the late 1970s and 1980s, many developing countries implemented austerity programs under agreements with the International Monetary Fund. Since these programs were often perceived as very costly, especially with regard to the demands for reducing imports, barter inevitably became an attractive way for engaging in international trade. In a free trade environment, the developing nation would export goods, receive foreign currency, and then under IMF terms, use the earned income to service international debt obligations. The result is that the developing nation has less money available to pay for imports. With barter, all of the "earnings" from exports pay for imports. Thus, barter allows the developing nation to "hide" foreign exchange from the IMF and other creditors.

It is unclear whether debtor nations have systematically used barter to avoid IMF conditions. Yet Brazil and to a lesser extent Mexico, the largest debtors in the world, have increasingly engaged in barter since the onset of their debt reschedulings. Brazil, in particular, has sought to buy large quantities of oil through barter deals with Iraq, Nigeria, Venezuela, and Malaysia. Another example of this phenomenon may have been Jamaica's 1983 deal with Chrysler, where it swapped trucks for alumina. The Jamaicans appear to have been motivated, at least in part, by their desire to circumvent international creditors.

Countertrade can act as the equivalent of a tariff on imports. Since foreign exporters raise the price of their goods to cover added transaction costs, countertrade requirements tax imports. Countertrade requirements will further discourage imports because fewer multinational companies will be willing to export under a countertrade regime than would export to a country under free trade.

3. Imposing austerity

Governments that recognize these features of countertrade can use countertrade requirements as a political tool to dampen imports and impose austerity. While direct import controls, such as high tariffs and quantitative restrictions, may be more effective in reducing imports than countertrade regulations, direct controls impose transparent costs on the

economy. The advantage of countertrade to the government is that the cost of the government regulations are not transparent, which lessens the political cost of an austerity program.

Many of the developing country governments which have imposed countertrade regulations in the early 1980s have utilized countertrade for this purpose. For example, hidden austerity was part of the logic underlying Indonesia's countertrade policy. At the time of its countertrade announcement, Indonesia was suffering from a deteriorating balance of trade and excess government expenditures. The government stated that its only alternatives were to cut imports drastically or impose countertrade. While the Suharto government would have to take direct responsibility for austerity if it chose the former course, it could blame the subsequent reduction in imports on stubborn multinationals by choosing the latter course of countertrade.

Similar motivations appear to underlie the Colombian government's experiment with countertrade in 1984. Colombia, suffering from acute balance-of-payments difficulties in 1983, imposed extraordinary counterpurchase requirements that went as high as 200 percent of imports. By imposing such stiff regulations, and by excluding traditional exports such as coffee from the acceptable list of countertrade products, the Colombian government knew that imports would have to fall. It was no accident that critical imports were not included in the countertrade package and much of the $300 million in imports targeted for countertrade included luxury products, such as olives, cognac, brandy, and air conditioners. The Colombians undoubtedly hoped to disguise their austerity with the countertrade program.

The future of countertrade

There are many additional reasons that a country could decide to adopt countertrade, including the desire for foreign direct investment, technology transfer and local job creation. Several of these motivations are discussed elsewhere in this volume. While individual countries can always find a rationale for countertrade, the key concern of this essay has been to outline the conditions under which countertrade has become a global phenomenon, and suggest its likely future in the world economy.

What should be clear from this discussion is that countertrade is not a transient phenomenon which is purely an outgrowth of the debt crisis. Easing the pressures of the third world debt burden will alleviate some of the pressures for countertrade, such as the desire to hide export earnings

from the IMF. Yet adequate liquidity and renewed growth in the world economy are not sufficient to resolve all the problems that lead to countertrade. Even though 1984-85 were years of recovery in world trade and improved liquidity for many developing nations, they also were years of growing protectionism and probably peak years for global countertrade since the 1930s.

Some of the incentives for contertrade will always exist in the world economy. Importing governments will seek to take advantage of the scale and lower transaction costs of multinational corporations; Eastern European nations will also continue to use countertrade to facilitate planning. Large scale countertrade, however, exists mainly because of the excess capacity in many global industries and the soft prices in most global commodity markets. Therefore, large scale countertrade will only disappear if major adjustments occur in the structure of these industries and markets. Sustained world growth, for example, will improve the situation in commodity markets. If demand for basic commodities such as oil and grains increases, some of the incentives to impose countertrade will weaken. At the same time, rationalization of capacity in major industries such as autos, steel, and aerospace will in the long run reduce the likelihood that large multinationals will be willing to incur the cost of countertrade.

Such a scenario, however, suggests that global countertrade will not disappear in the short run. Problems of surplus capacity in capital-intensive industries and soft commodity prices are unlikely to be resolved until at least the late 1980s. Moreover, the beggar-thy-neighbor motivation for countertrade has created a classical collective goods dilemma, which will further exacerbate the problem of returning to freer trade. As the world economic picture improves, a single nation might prefer to eliminate its countertrade policies. Yet unless other nations also remove their countertrade restrictions, the first country to act will lose. Other competitor countries that continue to require countertrade will steal market shares. If nations can agree collectively to eliminate countertrade, everyone is better off; without collective decision making, an individual nation has an incentive is to maintain its countertrade practices.

The future growth in countertrade is therefore going to depend on both the extent of adjustment in the world economy, and the ability of nations to negotiate about countertrade. Abba Eban once said that he was optimistic about the future of the world because nations will eventually do the right thing — after they have exhausted all of the alternatives. Such a statement seems appropriate for describing the future of countertrade. Barring a collapse in the world economy, countertrade should not persist on a large scale beyond the end of the decade. As world economic growth

picks up, positive adjustment will occur in capital-intensive industries, commodity prices will strengthen, and the global incentives to countertrade will weaken. And just as nations realized in the aftermath of the 1930s that countertrade was an inefficient means for handling international trade, so too they agree that countertrade is not the best trade for the 1990s.

[1] I.M.F., *World Economic Outlook*, (Washington, D.C.: IMF, 1982, 1983, and 1984); and S.J. Anjaria, Z. Iqbal, N. Kirmani, and L.L. Perez, *Developments in International Trade Policy*, (Washington, D.C.: IMF, November 1982).

[2] W.M. Corden, *The Revival of Protectionism*, (New York: Group of Thirty, 1984).

[3] I.M.F., *Report on Exchange Arrangements and Exchange Restrictions*, (Washington, D.C.: IMF, 1984), p. 5.

[4] William Cline, *Exports of Manufacturers from Developing Countries* (Washington, D.C.: Brookings Institute, 1984), p. 19.

[5] G.K. Heilleiner, *Inter-firm Trade and Developing Countries* (New York: St. Martin's Press, 1981).

[6] *Wall St. Journal*, October 1, 1984.

[7] Interviews by the author in 1984.

[8] *The Nation*, (Bangkok) January 3, 1985.

[9] Pompiliu Verzariu, *International Countertrade: A Guide for Managers*, U.S. Department of Commerce, November 1984.

[10] While long-term contracts can guarantee markets, they can also create severe rigidities in international trade, especially if prices change radically in the midst of the contract. If the countertrade is specified in units or provides a range on prices, then one party will lose if prices move outside of the range.

Examples of contemporary countertrade

Michael Morrison

Michael Morrison, a close observer of countertrade techniques and Editor of Countertrade Outlook, selects some typical recent deals to give the reader a sense of current trends.

Barter (basket of goods), south/south, bilateral, medium-term

Cotia Comercio Exportacao & Importacao SA of Brazil and Malaysian Overseas Investment Corp Sdn Bhd (MOIC) of Malaysia have an agreement to trade goods valued at $20 million over 18 months. Each side presents the other with a "menu" from which selections may be made. Cotia offers a list that includes iron ore, cotton, feed grains, foodstuffs, frozen meat, heavy equipment, commuter planes, light arms, paper and chemicals. MOIC offers rubber, crude oil, rubber processing machinery, and tin. Each side determines its selections according to market values at shipment date.

Such an arrangement requires a financial organization to record shipments and consequent debits and credits for the two parties. In this case, the role was undertaken by Banque Française du Commerce Exterieur's (BFCE) office in Singapore. BFCE maintains a non-interest bearing US dollar account from funds deposited by each side. As each party ships, the bank releases payment in local currencies. BFCE does not levy any charges for this service, making its profit from the float on the deposits. Some of the Malaysian goods will actually be shipped to Nigeria as payment by Brazil for crude oil being taken in Brazil's separate barter deal with Nigeria.

Barter on counterpurchase, north/south/east, trilateral, medium-term

Austria's Allgemeine Finanz-und Warentreuhand Aktiengesellschaft (AWT) is financing and taking a position in a countertrade arrangement

* Disclaimer: these examples are taken from COUNTERTRADE OUTLOOK, a weekly newsletter that is a journalistic, not academic, enterprise. Some of the examples were provided by official spokesmen for the affected companies and governments. However, many companies have a policy of not providing any on-the-record information about their countertrade activities. Therefore, some examples were pieced together from information provided by sources deemed, but not guaranteed, by COUNTERTRADE OUTLOOK to be reliable.

involving an exchange of Malaysian and Romanian goods. It is AWT's presence that suggests this arrangement is an example of an exotic form of countertrade: the Romanian goods are likely to be items being taken out of that country by the Austrian firm in fulfillment of a counterpurchase obligation incurred by a western vendor to Romania. In other words, this is one countertrade deal riding on the back of another. Malaysia (through MOIC) will ship crude oil, rubber, tin, palm oil, cocoa and pepper to Romania and will take back $50 million in pharmaceuticals, cotton and ferro manganese from AWT.

Military offset, sliding-scale credit, north/north, long-term

Increasingly, governments are using countertrade to achieve politico-economic objectives that go far beyond simply balancing trade or obviating a hard currency shortfall. An example is seen in the offset commitment attached to the sale by the French Dassault Co of 40 Mirage-2000 jet fighters to Greece. The French accepted a minimum offset obligation of 100 percent of the value of the sale (not more than 12-billion French francs) and a maximum offset of 200 percent. The exact percentage of the offset, between the minimum and maximum, will depend on how the Greek government rates the desirability of each offset project.

The agreement envisions three types of French offsets:

1 — Dassault will provide investment and technological assistance to the Hellenic Aerospace Industry for manufacturing of parts and for assembling integrated components of the aircraft.

2 — At least 30 percent of the commitment must be fulfilled through French investment and technological assistance that will allow Greece to establish maintenance and repair facilities for civil and military aircraft. The Greeks are hoping to gain a share of the repair and maintenance work on Dassault-manufactured aircraft now being flown under the flags of Egypt, India, and several Latin American nations.

3 — Indirect offsets in the areas of exports (those of agricultural commodities and ores must be incremental), tourism (maximum 10 percent fulfillment), non-military technology transfer and investment, transportation, and new energy sources.

The Greek Ministry of National Economy has set up a system of "eligibility & crediting" that defines products, companies, lines of business and conditions under which offset credits can be earned.

Each eligible offset project is assigned a credit weighting ranging from a minimum of 40 percent to a maximum of 80 percent. The weighting depends on Greek value-added and other factors. If all of the offsets projects carry the highest weighting, the French will fulfill their commitment

at 100 percent of the value of the deal. If all of the offset projects carry the lowest weighting, the French must complete projects equal to 200 percent.

The Dassault commitment is firm with no "out" clause. Fulfillment is measured over 15 years, broken down into 3-year periods. If a 3-year commitment is not fulfilled after a fourth year of grace, the company must pay a penalty based on the level of non-fulfillment.

Within the framework of the eligibility list, the French have the right to select projects and Greek companies with which to deal. However, Greek government approval is required in certain cases.

Regional barter exchange, south, multilateral, long-term

There are several regional barter exchanges set up by governments to permit regional trade with a minimum exchange of hard currency. One is operated by the 15 east and central African members of the Preferential Trade Area (PTA). When one PTA member exports to another, the export is recorded at the PTA clearinghouse in Hararre, Zimbabwe. Every two months, the clearinghouse tallies the values of all of the exports and imports and the resultant trade surplus or deficit of each member vis-à-vis each other member. Settlement then is made in hard currency. Another such regional exchange is the Latin American Intergovernmental Trade Assn (ALADI), which runs a clearing system in conjunction with the region's central banks. Accounts are settled quarterly in hard currency. While most trade under PTA's exchange system is in commodities, the ALADI trade umbrella covers manufactured goods as well as more basic materials. The Caribbean nations have established a working group to study a regional barter exchange.

Civil offset, north/north, bilateral, short-term

A number of developed countries demand offsets on foreign purchases that exceed a threshold value. To sell $28 million in coal to Greece's Public Power Corp, two independent US coal companies, Cravat Coal Co and United Energy Resources, both of Cadiz, Ohio, accepted a counterpurchase obligation of $7.2 million.

A maximum of 50 percent of the counterpurchase obligation can be liquidated by shipping the coal on Greek carriers. However, the US companies can receive credit for additional payments to Greek shipping companies for transportation of takebacks.

The US partners hope to make their shipping outlays the substantial part of their fulfillment. To cover the remainder they are buying Greek clinker at about $20 per ton. With the takeback shipping credit, they would completely fulfill their obligation by exporting three shiploads of the clinker.

The two companies have taken back the first shipment of clinker into the US. Future shipments may go to third countries. If they are unable to complete fulfillment with the clinker, they plan to look at steel and shoes.

The Greek side provided a list of possible exports. Except for the 50 percent maximum credit on shipping the coal, there were no limitations on how the offset obligation could be fulfilled.

Automotive counterpurchase, north/south, bilateral, long-term

A number of countries (e.g. Mexico and the Philippines) have countertrade regimes that are aimed specifically at the auto industry. Generally, the host country allows an automaker to sell vehicles if they are assembled in-country. Further, the automaker must generate enough hard currency to cover the cost of the inputs (knocked-down kits) for the assembly plant. Under this type of arrangement Sumitomo and Mazda established Omega, a trading company, with Compañia Colombiana Automotriz (CCA), which holds 91 percent of the equity (the Japanese partners split the remaining 9 percent).

In 1984, Omega arranged for exports of textiles, sesame and other Colombian goods valued at more than $20 million. The company is negotiating to export the Mazda automobiles assembled in Colombia to Ecuador under a CT arrangement.

Barter, north/south, bilateral, spot-term

A classic example of a spot barter transaction, done because the purchaser could not expend hard currency, was the swap of $2 million in Mack trucks and spares for sugar from the Sugar Marketing Board of the Dominican Republic. The deal was put together by Citicorp International Trading Co. The sugar was valued at 21¢ per pound, which was in excess of the world market price at the time of the transaction. This meant there was a "disagio" (the difference between the transaction value and the actual market value of a good or commodity taken back in trade) which had to be financed through (1) a commensurate mark up in the transactional value of the vehicles or (2) a decrease in the profit margin.

Bilateral trade agreement, south/east, medium-term

Bilateral trade agreements are government-to-government barter accords which typically have a life of 1-5 years. While there are bilateral trade agreements all over the globe, the largest are East/East and South/East contracts. The agreements stipulate a term, a target level of trade, and the goods from which each side can select. Usually, the accord stipulates that any trade imbalance is settled periodically in hard currency.

For example: Pakistan and Bulgaria, in May, 1985, signed a bilateral trade agreement under which goods valued at $164 million are to be exchanged during 1985. That represents an increase of $73 million over the value of goods swapped in 1984. Pakistan is offering cotton, cotton yarn, fabrics, cotton make-ups, leather, molasses, and engineering goods. Bulgaria offers pesticides, electric substation and transmission equipment, workshop tools, agricultural implements, industrial electronics, telecommunication equipment, industrial food processing equipment and other items. Under the predecessor agreement, exchanges primarily involved Pakistani cotton, yarn, textiles and molasses for Bulgarian workshop tools, compound fertilizers and steel rail sets.

Linked cash purchases, south/south, bilateral, spot-term

A variant of barter is a deal that is negotiated to achieve an even trade balance. Each partner pays the other in hard currency, so each side of the transaction is technically a cash deal. On the other hand, neither deal would have been done without the other. Offset and counterpurchase deals also are linked cash transactions. The difference, in this case, is that both partners are willing buyers. For example: Pakistan and India in 1985 signed an agreement on reciprocal purchases of Indian wheat and Pakistani rice of equivalent dollar value.

Media barter, north/south, bilateral, medium-term

Broadcast advertising time is one of the three main staples of US domestic barter. CBS, Inc is taking its domestic barter expertise into international countertrade. The Chinese television network (CCTV) last year entered into an agreement with CBS, Inc to barter advertising time for programming. CBS provides CCTV with 64 hours of programming for which it receives 32 1-minute advertising spots that it markets to western companies interested in the China market. Advertisers thus far include International Business Machines Corp and the Boeing Co.

Compensation, east/north, bilateral, long-term

Most compensation deals involve a technology transfer from North to South. The North side provides equipment or machinery and the South side pays in production from the plant or machine. But, there are role reversals. For example: Hancock Prospecting Proprietory Ltd and CRA Ltd of Australia have discussed a compensation agreement with the Romanian government under which Romania will supply mining and handling equipment for a new iron-ore mine in Western Australia and take payment in ore deposit from the pit.

If the deal is completed the ore will be shipped to Romania over 15 years. Exports will start at about 1-million tons per year (tpy) and build up to nearly 5-million tpy. The total development cost of the mine is about $A350 million. The value of the compensation deal is not known.

Compensation, north/south, bilateral, long-term

A compensation technique that seems to be growing in popularity is for a South country to have a Northern contractor build a power plant and then have the contractor take payment from the sale of the plant's output. For example: Japan's Kanematsu-Gosho is investing directly in an electric power plant to be built in a compensation deal in the Shenzhen, China, special economic zone. Total cost of the plant is ¥100,000 million. Kanematsu Gosho will put up ¥5,000 million. The remainder will be advanced by four Hong Kong companies. The five organizations have formed Gowa Denryoku (China) Co. Ltd, which signed the investment agreement with Shenzhen Special Economic Zone Electrical Power Development Co., Ltd in early March. Gowa Denryoku will receive all proceeds from sale of the electrical power for the first 7½ years of the plant's operation, and 80 percent for the final 30 months of the agreement.

Offset, north/north, bilateral, long-term

A number of countries (e.g., Spain, Israel, Portugal, Yugoslavia) will accept tourist promotion for both military and civil offset. While several aircraft manufacturers, in particular, use tourism in this way, the best known practitioner is McDonnell Douglas Corp. For example, the company accepted a 100 percent offset obligation to sell aircraft to Canada. As part of the obligation, it has a written contract with the Canadian government that it will produce US tourists on a best efforts basis. The Canadian Tourist Office has credited the firm with about $46 million for US tourists produced @ $100 per visitor day. The firm advertises in the corporate meeting trade press. Its travel countertrade department functions as a combination consultant and extension of the Canadian tourist office, putting client corporations in touch with, and supplying advice about, Canadian tourist officials and Canadian private sector travel suppliers. As part of its countertrade activities, McDonnell Douglas gives away stationery, passport and airline ticket holders, luggage tags, promotional folders depicting scenes from the Canadian destination, and other promotional goods to prospective Canadian visitors.

Switch, north/south/east, multilateral, spot-term

Bilateral trade agreements have given rise to a "secondary currency." This "currency" consists of unused trade credits which reflect the trade imbalance between two trading partners. Brazil is a major player in switch trade because its east European bilateral trade agreement partners seem to want Brazilian goods more than the Brazilians want their's. Thus Brazil is typically in a credit position and uses those credits to procure imports from non-COMECON sources without having to pay in hard currency. For example: Banco Frances e Brasileiros is the Brazilian subsidiary of Credit Lyonnais. Working with Merban SA, a subsidiary of Contitrade, the bank put together a deal under which Thai rice was purchased and resold to Brazil. Brazil made payment in discounted east European trade credits. The switch traders used the trade credits to export goods out of eastern Europe and made their profits on the difference between what they paid for the Thai rice and earned on the sale of the East Bloc goods.

Oil barter, north/south/south, trilateral, medium-term

The New Zealand Dairy Board and the New Zealand Meat Producers' Assn have become aggressive countertraders. Taking part in a growing practice, they used crude oil as an "alternative currency." Working with Japan's Toyo Menka Kaishya Ltd, the New Zealanders shipped approximately 150,000 tons of mutton (worth around US$190 million) to Iran. In payment, Toyo Menka received approximately 7-million bbl of Iranian crude and remitted hard currency to New Zealand. Meanwhile, the Dairy Board this year will trade 24,000 tonnes of butter and other dairy products for Iranian crude and refined products in a deal estimated to be worth $60 million while the meat producers ship 17,000 tonnes of lamb to Poland in exchange for capital goods, mainly heavy mining equipment: pit-props and long-wall mining machinery.

Umbrella trade credit, north/south, bilateral, long-term

A countertrade strategy that is increasing in popularity is use of variations on the theme of the umbrella trade credit device. Under this strategy, a company's opening gambit in dealing with a trading partner is to buy — to position itself as a customer — in order to facilitate sales to the trading partner in the future. Bernard F. Connor, retired president of AMF, Inc's international trade operations once said that, to AMF, countertrade is not a business per se, it is a market penetration tool. "If we have to buy something to penetrate the market, then we will do it," Connor said. A good example of the use of the umbrella trade credit strategy is offered by

Canada's Spar Aerospace Co. Spar backed into a countertrade arrangement in Brazil. In order to sell two satellites and related ground-control systems to Embratel for $160 million, Spar committed itself to buy $60 million in Brazil exports and agreed to pursue an additional $105 million on a best-effort basis. The Canadians were competing for the award against a French company, which was first to offer reciprocity. Spar had to match it.

But, after penetrating the Brazilian market with one sale, Spar executives thought they saw future opportunities and decided to move beyond *ad hoc*, reactive countertrade. Now, Spar is seeking a long-term involvement in the Brazilian market, hopefully leading to further satellite sales.

The company is transferring technology to the Brazilians through an undisclosed level of co-production, which wins political points for the Canadians. To handle the original offset program, Spar set up a trading house in Brazil that serves as a marriage broker (it does not function as a principal). Until the transaction is completed, the trading house handles all communication including samples, pricing, specifications and transportation requirements.

This trading operation has a mission beyond simple fulfillment of Spar's original offset obligation. It seeks, on a continuing basis, to identify Brazilian products that can be marketed outside the country and then finds customers for them. Explains Spar's trade director, Karsten Westphal: "We hope to establish long-term, stable trading relationships between Brazil and world markets that go well beyond the letter of the offset agreement."

The company figures the CT cost factor in Brazil to be about 1 percent of its sales.

The growing use of countertrade among developed countries

Michael Casey

European governments tacitly accept countertrade and many of them actively seek it when placing large export orders. Michael Casey, a London-based consultant to several major international corporations and former chairman of British Shipbuilders, gives his view of the role of European governments, companies and financial institutions.

Although countertrade has not been a normal instrument of trade among the northern industrialized countries, some European countries are now seeking counterpurchase for large export orders on an *ad hoc* basis. These usually apply to government purchases of aircraft, large high-technology installations and military equipment, which often involve an element of direct offset or of related counterpurchase. Countries such as Portugal and Greece have engaged in such arrangements and there is now evidence that Spain, Belgium, Italy and the United Kingdom are engaged in countertrade with their EEC partners.

For many years, countertrade by industrial countries in western Europe was confined to the eastern bloc where it has been an established feature of trade since 1945. It is estimated that on average countertrade accounts for around 25 per cent of eastern Europe's trade with the West. It is relatively even more important in Comecon trade with developing nations (the OECD's estimate of around 30 percent seems reasonable; on the other hand, most market observers would say that its estimate of 15 percent of East-West trade is too low).

Countertrade, usually in the form of counterpurchase, is handled centrally by designated state trading organizations. Each country has its own standard form of agreement and the importance of countertrade in a particular transaction will depend on the priority given to the western goods in question, the current economic circumstances of the country and similar considerations. The USSR itself has for many years favored countertrade as an alternative to conventional methods of trading. The Ministry of Foreign Trade has a department specifically responsible for developing countertrade projects with capitalist countries. Buy-back has been used extensively to help finance large capital projects, particularly in chemicals and gas.

According to Soviet claims, some 45 large industrial projects had been commissioned on this basis by 1983. The Soviet Union tends to regard buy-back as a form of industrial cooperation and thus as an ideologically superior form of trade.

Romania, one of the most difficult markets in eastern Europe, frequently makes demands for counterpurchase at more than 100 percent of the contract value, yet there is usually only a very limited choice of goods, of poor quality. The Foreign Trade Law of 1981 requires enterprises engaged in foreign trade to balance their hard currency accounts at the end of every quarter. The authorities in Poland, an important market for German and British exports, have varied the emphasis placed on countertrade. For major capital goods purchases, however, Poland has sometimes insisted on complex arrangements involving joint production and marketing. A similar pattern is found in Yugoslavia and Czechoslovakia.

Among the developed countries outside East Europe, only Australia and New Zealand have statutory requirements entailing countertrade and offset for large public-sector and defense purchases, though Canada also is tending to require countertrade for such purchases. Australia has both federal and state policies requiring overseas suppliers to provide offsets comparable in technology with the Australian purchase — the present minimum being 30 percent. Federal offsets are required when a contract value is A$ 1 million and above and the imported value more than A$ ½ million. Offsets are set against the imported value of the contract and are normally required to be in similar areas of technology. Most of the Australian states have offset policies which use similar criteria to the Federal offset scheme; they are designed to develop state manufacturing industry by requiring suppliers to direct work to similar technologies. These arrangements apply only when the Federal or state authorities are the direct purchaser or the purchase is within their gift by being made by a quasi-government institution.

New Zealand can ask for both offset and counterpurchases. Tenderers for government purchases, or other publicly-funded purchases, in excess of NZ $2 million are invited to submit proposals for offsets. These may be in the form of joint manufacturing, technological transfer, joint research and market assistance for locally-produced goods.

Attitudes of west European governments

The formal position is to disapprove of countertrade, though the manner in which disapproval is expressed varies. Members of the European Community share an international commitment to an open,

cash-based, multilateral trading system, and endorse the usual arguments against countertrade. But at a more realistic level of national self-interest, it is tacitly accepted. Official advice from the British government, for example, acknowledges that there are situations in which accepting an element of countertrade can be the only way of securing export orders. This is left to the commercial judgment of the firms concerned. The British government thus can give practical help to businesses seeking advice on countertrade, but as a matter of principle it is not prepared to become directly involved in countertrade negotiations or transactions (although this is the stated position, it contrasts with the UK government's involvement in military offsets deals related to direct countertrade purchasing, as many examples attest including the supply of Chieftain tanks to Iran in 1975). British exporters have been warned that goods taken under countertrade arrangements could be subject to anti-dumping duties and other import regulations. As regards British export finance there is a general condition that payment obligations of the buyer under any export transaction subject to ECGD cover must be totally independent of the provision of any related contracts and of the performance of such related contracts. In a nutshell, this means that the transaction, to be eligible for ECGD cover, must have all the characteristics and effects of a transaction to which no countertrade arrangement is related — which is not to say that no British exports covered by ECGD insurance or finance have entailed countertrade obligations. But ECGD will not insure the provision or disposal of goods accepted in countertrade, though private insurance is available in the market.

It is also reported that Germany, which has been one of the staunchest opponents of countertrade (except in connection with East-West trade) has agreed to take oil from Iraq in part settlement of DM 280 million in Iraqi debts (*Countertrade Outlook*, October 14, 1985). As another article in this collection explains, on average about half of all US military sales include offset obligations — and in 1980 the proportion was as high as 94 percent, or $6.6 billion out of $7 billion in sales. Offset obligations accounted for almost 60 percent of the value of military sales to European countries.

Against this background, it is not surprising that there is little inclination to develop international action against countertrade. The complexities of the agreements would in practice make it extremely difficult to control them. There are no international rules under which countertrade can be controlled or monitored. Discussions in the GATT have been inconclusive. Pressure has come rather from the IMF, which, however, regards countertrade requirements as only one variety of a wide range of restrictions on trade and payments — and often not the most serious. As is

the case with all international agencies, the IMF also is subject in the last resort to the policies of its most powerful shareholders who include some of the largest countries engaging in countertrade.

Private sector institutions —
European banks

European banks have shared in the international trend to set up countertrade "departments." Some of these banks are prepared to act as principals from time to time. The French concentrate countertrade activity in the Banque Française du Commerce Exterieure, which is prepared to take the principal risk. East European countries have created specialized foreign trade banks with a specific remit to develop countertrade business — sometimes beyond their own borders. But most of the major European banks confine themselves to providing finance and advisory services for trading and exporting companies.

European trading houses

There are literally hundreds of companies which offer their services in countertrade activities. The role of a specialized company is determined by its standing in the market and the strength of its connections. A few of the trading houses, which buy and sell goods as principals, have developed specialized expertise in specific areas. They are conscious of the need to ensure that countertrade does not destabilize world markets. On the whole they favor specific, *ad hoc*, deals handled by specialists.

The role of Vienna

Vienna's reputation as a countertrade center has been developed from its success in East-West trade; it is undoubtedly the most active of the numerous west European cities that have built up brokerage, banking and consulting expertise in trade with the Iron Curtain countries. Others are Zurich, Frankfurt and Helsinki, all distinguished by their proximity to the centralized economies.

Vienna's advantage is that it is nearer the market and is ideally positioned for contact with east European nationals who find it easy to travel to Austria and often are not even obliged to hold a visa for that country. Many east European officials prefer dealing through Vienna and with Austrians, which helps to explain why many west German firms do their countertrade business through Vienna. The Vienna Chamber of Commerce has made considerable efforts to promote Vienna as a window on east Europe. It has also promoted Vienna as a center for countertrade elsewhere. The Centrobank, jointly owned by Italian, Polish and British

banking interests, is one of the most successful countertrade houses in Vienna and handles deals all over the world. It is this body of expertise that is now giving Vienna a powerful position in putting together countertrade deals in developing countries and Asia.

The role of London

The City has begun to play a larger role in organizing and financing countertrade deals as requests for countertrade increase in the Third World and among developed countries. The City's unparalleled range and variety of services — including legal, accounting, broking, banking, shipping and insurance — and above all its world-wide contacts naturally facilitate the type of transaction involved in countertrade. Its commercial political risk insurance market, with premium income put at around $150 million a year, is available for possible coverage of some countertrade risks. The concentration of foreign banks in London — where 399 now have branches or representative offices — produces a ready supply of economic and commercial information on any country in the world. Some foreign banks have chosen to make London a center for servicing the countertrade requirements of customers. These include Citicorp's International Trading Company, which can act as a principal and operates on a global scale, Manufacturers Hanover World Trade Corporation and AWT, owned by the Creditanstalt-Bankverein of Austria. Among the largest trading houses with substantial London operations handling countertraded products are Philipp Brothers, Merban (owned by Continental Grain), Mitsui and Metallgesellschaft Services (in partnership with Louis Dreyfus and First Boston). If countertrade should continue to grow, the City will clearly take a significant share of the market.

Why countries find countertrade a double-edged sword

Thomas B. McVey

Countertrade can have many unintended and adverse side-effects on the economies of countries that engage in it. Thomas McVey, a leading Washington attorney with Lane and Mittendorf, reviews these and suggests ways in which countries can best use their purchasing power to extract benefits from foreign suppliers.

Countertrade can appear an attractive option for a developing country wishing to expand its trade or finance long-term development. This is partly because the benefits seem assured and immediate, whereas the drawbacks — if considered at all — are longer-term and less easily understood. Countertrade can be used to open new export markets, curb imports, attract foreign investment and technology, postpone or conceal politically-unpopular austerity measures and even rekindle hopes for long term project development. It is hardly surprising that it has been embraced by many Third World countries and even some developed country governments as a promising tool for preserving economic welfare in the face of an uncertain world economy.

Yet, quite apart from broader concerns about the impact on the world trading system, countertrade can be complex, expensive and disruptive to the economy of the nation that uses it. These side-effects, often unrecognized, make countertrade truly a double-edged sword.

(a) Disruption of traditional export markets

Perhaps the most frequently overlooked problem is the damage suffered by a nation countertrading commodities that it already exports. The "new" customers which purchase the goods frequently resell them to the country's *existing* customers — at a discount. So the country loses cash customers and foreign exchange earnings. Even where new customers are found a discount is frequently given, which softens the world price of these products, again resulting in a net decrease in foreign exchange earnings. When Saudi Arabia exchanged 35 million barrels of crude oil for 10 Boeing 747-300's in 1984, the release of the discounted crude oil into the world oil market caused a sharp downward spike in the prevailing crude price, and a global disruption in the spot price of crude oil.

(b) Higher prices for imports

Most firms bidding on projects in countries which are known to require countertrade anticipate the added costs required for complying with the countertrade requirement and build these into their bid price. Nations pay up to 30 percent more for products purchased in countertrade transactions, as compared with a free market exchange. Such price increases are particularly injurious to the host country if the private firm increases its price but only commits to a "best efforts" obligation to sell the countertrade goods and fails to perform. In this instance, the nation pays the higher costs but does not receive any corresponding benefits.

(c) Fewer interested bidders

Companies prefer not to do business with countries that insist on countertrade, due to the complexity and risk involved in a typical countertrade transaction. As a result, nations requesting countertrade often have fewer private firms bidding on their projects, a poorer selection of products and services from which to choose and a less economic procurement process. It is generally the medium-sized firms which are precluded from the market due to countertrade, and these are often the firms which are the most innovative, responsive and competitive.

(d) Threat of retaliation

When one nation increases exports *via* countertrade, other countries are likely to lose market share, and thus may retaliate — for instance by imposing a reciprocal countertrade requirement, subsidizing competing products and raising tariff or non-tariff import barriers.[1]

(e) Opposition of trading partners

Certain governments, particularly those of the Western developed nations, usually take issue with the enactment of a countertrade program by other nations. This opposition is based both on general free trade principles and the interest of the protesting nations in protecting their existing domestic and export markets. These countries view countertrade as an indirect threat to their long term economic welfare and may not only voice their displeasure through diplomatic channels, but also apply economic sanctions, including reductions in trade concessions and foreign aid. The United States and a number of other western developed nations lodged protests with Indonesia in opposition to that country's countertrade program, and even the major Japanese trading companies were — for a short time — prohibited from engaging in countertrade with Indonesia under pressure from MITI.

(f) Short-term stimulus at long-term cost

Above all, the increase in exports resulting from most types of countertrade requirements is likely to be temporary and self-defeating. Under a countertrade requirement, the importing sector of the economy subsidizes the exporting sector by bearing the burden of the higher prices for imports which foreign companies charge. Once this subsidy is removed, the country's foreign sales will return to their earlier levels, causing a contraction in the affected industry and possibly in the economy. In cases where the industry has expanded capacity to meet increased demand, the loss of these temporary foreign markets can result in greater unemployment in the local economy. As a result, the economic "benefits" created by most types of countertrade can be misleading, destabilizing and even counterproductive.

Broader uses of countertrade

Given the economic facts of life confronting many countries today, countertrade is nevertheless an established and growing practice, and it is worthwhile to examine how its cost may be minimized. From the viewpoint of an individual developing country, countertrade is probably better utilized as a means of fostering capital formation and long-term economic development rather than just a stop-gap means of financing imports. Because of the drying-up of medium-term bank finance for many developing countries, economic planners currently are exploring other means to raise capital, including foreign direct investment and the expansion of locally-owned firms which generate exports.

One method relies on the use of a country's purchasing power to require foreign firms to provide benefits with longer-term economic effects such as undertaking investments in the nation, transferring technology, hiring local firms or training local employees. In contrast to conventional types of counterpurchase, such "longer term" concessions can generate ongoing benefits for the nation through the expansion of its industrial capacity, enhancement of the local work force and continued generation of foreign exchange long after the initial countertrade commitment has terminated. For example:

Local Investment — The host government may request that a foreign private firm selling to the government agree to undertake an investment in the host country. This can be an investment in local private companies or in "para-statal" business enterprises. Frequently the amount of the investment is tied to the amount of the purchase, *i.e.*, 100 percent of the purchase price of the item sold by the firm. In addition, the country usually requires that a portion of the equity (*e.g.* 50 percent) in the investment project be

held by local parties, although the foreign party is frequently required to invest most or all of the capital. The country may identify specific industries into which the investments will be required to be made; the funds often will be channeled into industries which have been targeted for strategic economic development such as the electronics and other high technology sectors.

A well-known example of this type of transaction is the Saudi "Peace Shield" project. Under this program, Saudi Arabia required that the firms which were to be awarded the $1.3 billion Royal Air Force defense contract make significant investments in Saudi high technology ventures. The consortium of companies which was awarded the contract (Boeing Aerospace Co., Westinghouse Electric Corp., International Telephone & Telegraph Corp. and Computer Science Corp.) offered a variety of proposals in response to the requirement, including the establishment of: (i) an $80 million telecommunications equipment manufacturing plant to produce copper cable; (ii) a $100 million electrical equipment plant to produce telecommunications equipment; (iii) a $20 million data processing service project; and (iv) additional projects in the avionics, automotive and biotechnology areas.

Technology transfer — On occasion, private firms will offer to transfer technology to the nation as an added incentive to obtain a contract. Frequently, this is offered as part of a larger package of inducements under a comprehensive offset program. The technology, in the form of a patent, process, know-how or other form, may be offered alone or in conjunction with the hiring of local companies as subcontractors or the training of local workers. Examples of the types of technology transferred by one major US aerospace firm in its various offset transactions include processes for the production of advanced composite materials, cruise missile navigation equipment, fiber optics and computer-aided avionics design.[2]

In such an arrangement, the nation acquires a technology to which it otherwise might not have access, and does so without the need for investment and frequently with the guarantee of a "built-in" market for the output from the technology for a period of time. The benefits in increased industrial capability and increased export capacity may endure long after the countertrade requirement has been terminated.

Compensation transaction — In this type of transaction, a private firm provides a process, technology or entire plant to a country and agrees to be paid in output of the technology or plant over a period of years. Alternatively, the firm is paid for the sale of the plant in dollars (generally with borrowed funds) and agrees to purchase a portion of the output of the plant over a period of years (frequently at a price and volume level calculated to cover

the debt service). If demand for the product of the plant is strong, such arrangements plainly can provide an economic return long after the initial countertrade agreement has been concluded.

Production sharing — This applies to mineral, hydrocarbon or other natural resource exploitation, where a foreign company is paid a portion of the resources produced in return for its investment. This practice is used by countries which lack the capital to develop their resources or prefer to avoid the risk associated with such development. Examples of such activity include the offshore oil development program in China, as well as the famous Yamal "gas-for-pipes" transaction involving the Soviet Union.[3]

These and similar "long term" reciprocal practices are considered by many observers to be less economically disruptive than traditional forms of countertrade, and can result in the production of competitive products, as compared to quantities of otherwise unmarketable products which are frequently forced onto world markets under traditional countertrade.

Nevertheless, distortions still occur. Even under "long term" reciprocal practices, capital and other resources are diverted from arguably more efficient uses due to pressures outside of the marketplace. Once again, the desirability of countertrade as a tool of economic development, as with more conventional types of reciprocal trading activities, depends upon the point of view of the observer and his economic and political interests.

The countertrade choice

Countertrade presents governments with a difficult choice. On the one hand, it undermines the basic assumptions of the international trading system and, if accepted on a widespread basis, would in the long run threaten the integrity of this system. On the other hand, countertrade is often seen as the only practical means through which many developing nations can protect their economic interests. Many of these nations feel threatened by the credit restraints and protectionist pressures of the developed world and view countertrade as a last-ditch effort to assure their economic survival.

In the event that a nation has chosen to adopt a countertrade program, however, there are ways in which such a program can be conducted which can maximize the economic benefits to the country and minimize the negative impact upon both it and, in certain cases, the rest of the world. For instance:

(a) Goal identification:

The host country should specify in advance the goals of its countertrade activities, and in particular whether they are aimed primarily at

short-term "cash flow" improvements and export market development or long-term benefits.

(b) Product selection:

As a general rule, only products which currently are not exported should be sold in countertrade. Where existing exports are permitted to be resold, this should be restricted as far as possible to new export markets, and the movement of the goods should be monitored carefully through the review of bills of lading, chartering documents, discharge reports, and market intelligence.

(c) Flexibility:

The countertrade program should be voluntary and informal rather than mandatory and highly-publicized, *i.e.* private firms should be permitted or even discreetly encouraged to submit countertrade proposals but not required to do so as a condition of closing a transaction. In these circumstances, many aggressive private firms will still offer countertrade, yet other firms which are not in a position to respond to countertrade requirements will not be precluded from bidding on projects. The nation will retain the benefit of a wide selection of offers and will be able to review both countertrade and non-countertrade offers to determine the best overall proposal.

(d) Additionality:

Emphasis should naturally be placed on the development of new markets and industrial capacity with a view toward continuing to sell to these markets once the initial countertrade requirement has been concluded. Exports of manufactured goods rather than bulk commodities or minerals should be promoted; additional exports of bulk commodities and products such as steel, textiles and petrochemicals will often trigger accusations of "dumping".

(e) Long-term reciprocal requests:

The country should emphasize reciprocal benefits beyond the mere purchase of the nation's products, such as the hiring of local subcontractors, use of locally-produced goods, investment in local industries, training of local workers and transfer of technology.

Countertrade can pose significant threats both to the imposing nation and the rest of the world. Fortunately, many of these potential problems can be minimized through careful planning and effective management of countertrade activities. As there may not be any short-term solutions to the

problem of countertrade or its underlying causes, countries that exercise care and prudence in their countertrade activities will help to minimize its cost to themselves and others.

NOTES

[1] *See*, Countervailing Duty Petition of the American Textile Manufacturers' Institute, the Amalgamated Clothing and Textile Workers Union and the International Ladies' Garment Workers Union related to *Certain Textiles and Textile Products from Indonesia*, before the Department of Commerce, July 20, 1984; *See also*, Countervailing Duty Petition of the American Textile Manufacturers Institute, the Amalgamated Clothing and Textile Workers Union and the International Ladies' Garment Workers Union related to *Certain Textiles and Textile Products from Portugal*, before the U.S. Department of Commerce, July 20, 1984. See also *US International Trade Commission, Anhydrous Ammonia from the USSR. Report to the President on Investigation No. TA-406-5, Under Section 406 of the Trade Act of 1974, A-21, 103 Pub. No. 1006*, October 1979; *US International Trade Commission, Anhydrous Ammonia from the U.S.S.R., Report to the President on Investigation No. TA-406-5, Under Section 406 of the Trade Act of 1974, A-21, 103 Pub. No. 1051*, April 1980.

Truck Trailer Axle-and-Brake Assemblies, and Parts Thereof From Hungary, Determination of the Commission in Investigation No. 731-TA-38 (Preliminary) Under the Tariff Act of 1980, United States International Trade Commission, ITC Publication, No. 1135, March, 1981.

See, e.g., rights provided under section 301 of the Trade Act of 1974, 19 U.S.C. Section 2411. For a thorough discussion of the antitrust and fair trade law issues involved in countertrade, *See*, McVey, Thomas, "Countertrade: Commercial Practices, Legal Issues and Policy Dilemmas", 16 *Law and Policy in International Business*, pp. 37-56 (1984).

[2] *See*, "Countertrade: Commercial Practices, Legal Issues and Policy Dilemmas," *supra*., p. 13, Footnote 29.

[3] Technically, in the Yamal transaction the private firms were paid in natural gas for their involvement in only one part of the larger energy development project, the construction of the pipeline system.

The reluctant countertraders

David H. Swanson

The world's major trading companies bring special expertise to the business of countertrade, but prefer to use the more efficient, traditional techniques of international trade. David Swanson, Senior Vice President of Continental Grain, explains their practices and point of view.

Surveying the lists of countertrade 'mega-deals,' it might be thought that countertrade is primarily the province of government and that there is only a limited participation by trading companies. However, politicians may sign covenants or treaties, but the execution of these agreements is done mainly by the major traders. These companies keep a low profile: first, they have every reason not to advertise their most profitable businesses in countertrade; second, a major contribution they make to many countertrades is "privatization," a term correctly suggesting that their activities are not readily available for detailed, public scrutiny.

There are two principal types of countertraders:

— Countertraders whose performance is measured by profitability and whose existence is determined thereby. This may include Phibro Salomon, Andre, Metallgesellschaft, Continental Grain (Conti Trade Services), Sears World Trade, and some government-owned companies (Renault) and parastatals (the product agencies of the centrally-planned economies), as well as certain profit centers within the soga shosha — the Japanese trading companies. These are referred to as "principals."

— Countertraders operating for the benefit of other entities, notably large international manufacturing companies.

Sometimes these definitions become ambiguous. GE Trading's initial mandate was to be a profit center but in recent years it has been dedicated principally to selling General Electric products through offset agreements. The countertrading activities of Japanese companies as well as the organizations in centrally-planned economies are often intended primarily to serve the interests of their controlling organizations. A clearly successful captive, as an example, is the countertrading group which supports the

sales of 3M products, the parent organization. Many companies have individuals available for 'consultation' about countertrade. Some banks expanded upon this and created specialized countertrade departments, occasionally viewing them as profit centers. However, of the banks which set out to conduct countertrade for profit, many now act mainly as consultants or expediters.

In countertrade negotiations between the trading companies and governmental authorities, especially those of third world debtor nations, trading companies are frequently asked to identify new export products or new markets for traditional exports. Indeed, when a country places a countertrade requirement on a trading company such provisions are usually mandatory. The belief is that a trading company with its worldwide or national connections, with its knowledge in the transportation and forwarding of goods, and with its access to packaging, marketing and distribution skills, will be able to sell a new product or an old product in a new market more effectively than the prospective exporter itself. If the belief is valid the exporter earns additional foreign exchange; the exporter's products may be technologically or esthetically improved; and the exporter may develop a more highly trained and skilled labor force. All this seems common sense to the user or prospective user of a countertrade service.

However, the user may often obtain greater benefit by contracting with the captive countertrade unit of a major corporation. Examples of prominent countertrades of this kind include a beverage company's commitment to market wine in the United States as an offset to selling soft drinks to the citizenry of the wine producer. Commitments by aircraft or arms manufacturers to purchase components of these systems from the countries to which the planes or weapons will be sold provide other well-known examples. In other instances the output of mines or quarries has been pledged to trading companies who arranged the original financing for the development of the extractive project.

Each of these very typical examples has an element in common, which is a longer-term perspective, an investment in causing the countertrade to work. The beverage company invests in design, marketing, distribution and quality control. The aircraft manufacturer either establishes or monitors component fabricating capability in the country of end sale. The metals purchasing agent arranges for the equity and debt financing of the project, often retaining some financial participation. The point is that there often are longer-term commitments underpinning countertrade transactions. These longer-term commitments are more likely to be undertaken by the captive countertrade organization, working within its own support and expert group, than by a more purely trade-oriented company which, almost by definition, is not interested in long-term investment. Term investment for

trade development is more often made by the captive trading companies to support the long-term strategies of their parents.

Privatization of countertrade deals

There are, however, negative motives for a user to seek expertise in countertrade — 'the devil made me do it.' In the execution of countertrades undertaken for these motives, the ability of the countertrader to privatize a transaction may be of paramount importance.

In recent years, one set of motives has been inspired by a country's perceived need to circumvent cartel pricing or quota constraints. Countertrade is especially useful in this regard as the price of one commodity may be hidden in the price of another, as in an exchange of petroleum for grains, for example. Because of soft prices in the petroleum market and OPEC's attempt at maintaining a disciplined pricing structure, many of the major petroleum countertrades undertaken by Algeria, Iran, Saudi Arabia, Mexico and others doubtless had an element of price/cost ambiguity and some of them appear to be unstable, to say the least.

Maintenance of a cartel price structure, or the appearance thereof, may not be the only motive for this type of countertrade. Many commodities are subject to quota agreements, such as coffee, sugar and tobacco. With the coincidence of generally soft commodity prices and an increased need to earn foreign exchange to service foreign debt, many countries sought to export more than permitted under their quota agreements. In these instances, also, the services in privatization furnished by the major trading companies were useful.

Major trading companies, by definition, have the expertise to handle a variety of commodities in a variety of markets thus providing an opportunity for price blending and cargo re-routing to accommodate the requirements of these exporters through countertrade.

In other cases during recent years, trading companies, using the instruments of countertrade, have been employed by governments to avoid the restrictions placed upon them by banks and financial authorities such as the International Monetary Fund. Creditor agreements and IMF re-financing agreements generally require the use of foreign exchange earned by exports to amortize existing debt or to pay for previously approved priority imports. Countertrade techniques may be employed in several ways. A country may argue that an exchange of a certain tonnage of a metal it produces for wheat did not result in any foreign currency earned and, therefore, was exempt from any creditor agreement. Other countries have utilized their countertrade clearing accounts to by-pass liens on foreign exchange earned through traditional exports. Many South American countries have bilateral trading accounts amongst themselves

and with certain east European countries. These bilateral accounts are to be balanced each year with any imbalance paid in convertible currency to the party in credit. With the assistance of the major trading companies some countries were able to maximize their credit balances under bilateral agreements and use these surpluses for purchases outside of the IMF approved schedules. The justification for this exemption is that bilateral countertrade agreements do not generate foreign exchange but only clearing credits. However, the transparency of these justifications is a motive in itself for governments to have these countertrades occur through less public, more discreet hands.

The expertise and privatization skills of the major countertraders, also, may be employed for the benefit of the exporter to a less developed country market. One of the strengths of the profit-oriented trading companies engaged in countertrade is their expertise to get transactions structured and consummated despite a thicket of rules and restrictions which often impede business. In one recent case a southeast Asian government promulgated a 100 percent offset requirement. That is, for each US dollar value of sales to the government the foreign supplier was required to purchase an equivalent US dollar value of that nation's products for export. This obligation appeared to be so formidable that sales to this government were effectively interrupted. The solution was rapidly identified by the major trading companies. The export obligation did not restrict traditional products. The trading companies inserted their supplier clients between the traditional producers and the traditional buyers of this country's products, earning a fee, re-establishing sales flows to the country but gaining no increase in exports for the nation involved.

In situations inspired by such negative motives, the profit-oriented trading companies may be best suited to accommodate opportunistic requirements for privatization. These major countertraders have on hand the size, the financial capability, and the expertise to handle special off-the-market transactions and are conditioned to do business in a discreet and confidential manner. Where quick opportunism is required the captive trading companies may be less effective.

What are the attitudes of the trading companies themselves toward their activities in countertrade? The initial focus will be on the roles and performance of the 'captive' countertrading companies — those more or less dedicated to generating sales for the parent company.

The mixed record of captive units

Certain captives, perhaps inspired by the hype about countertrade generated by countless seminars, articles, newsletters and speeches,

attempted to go beyond servicing countertrades for the parent organization.

Sears World Trade sought to sell fully coordinated programs by which SWT consultant teams would enter a country and identify export opportunities in goods in which the country had a comparative advantage. This would be followed by SWT design, production and marketing units, overseen by SWT quality control and financial specialists. The entire process would result in incremental exports for the country so studied. SWT withdrew from this program because of heavy costs.

General Electric Trading announced its intention to provide smaller US manufacturing firms with the marketing and trade execution expertise necessary to develop new markets overseas. In particular, an expertise in countertrade was featured because GE Trading's assigned task from its parent company was to handle product offsets and buy-backs for GE's exports to the third world. The program disappeared. Undoubtedly the demise of the program had much to do with the general financial incapacity of third world countries to import during this period. The massive over-valuation of the US dollar, which has been allowed to persist over several years, also undermined the program.

3M in Minneapolis established a countertrade company primarily to deal in handling offset and product payback material. One technique used by this profitable captive trading company is to identify the product and then establish a joint venture with a company already engaged in that business. This has allowed 3M to be selective in accepting new products, cost conscious in avoiding the hiring of specialist bureaucracies and relatively successful in avoiding performance penalties because of the early participation of knowledgeable principals.

One may work through a list of the world's largest companies and discover individuals, divisions or consultants specializing in countertrade in almost every organization. The Austrians and Swedes have been working captive countertrade arrangements for decades. The French aircraft and automobile manufacturers have their own countertrade companies established in Geneva. Today, it seems everyone is doing countertrade or is considering doing it.

The largest and most aggressive world trading companies dedicating effort to countertrade for the benefit of their parents are those representing the major Japanese trading houses — the Zaibatsu. The relationships between the trading, financial and manufacturing elements of these Zaibatsu is so developed, so dynamic, and so symbiotic that it is difficult consistently to identify the driving forces at work. It is this very symbiosis, however, that makes the private Japanese trading companies the most

effective "captives" engaged in countertrade. In European and American companies, intercompany disputes about profit sharing and risk sharing often inhibit or stop successful countertrade programs. Indeed, even within governments, such as the Soviet Union, many of the parastatal organizations specializing in selling particular kinds of products refuse to work with each other on countertrade programs. By contrast, the Japanese drive for consensus, for team cooperation and for market share has caused the Japanese to be among the world's biggest trading companies (the profitability of their activities is, however, questionable).

The success of the Japanese and the fact that most countertrade transactions and frame agreements are between governments or parastatal organizations have caused the western private trading companies (especially the captives) to feel badly outflanked. How may one compete against central planning in countertrade, whether conducted by parastatals (East Germany, Mexico as examples) or private organizations (Japan)? This sense of having been out-organized has led to some interesting but unsuccessful experiments, especially in the United States, the home of rugged individualism and free trade.

The day-to-day habit of American industry is to keep secrets. For example, the countertrade specialists of many American captives refuse to be interviewed lest they give away marketing secrets to competitors. This, also, is why every American company seems to want its own countertrade expertise — whether it be an individual specialist or a bureaucratic department. If countertrade is the secret to international trade in the 1980s then it must be done secretly.

The ingrained reluctance of American companies to talk to each other has been reinforced by decades of anti-trust prosecution and harassment. In recognition of this, Congress passed some years ago an act allowing industry groups to establish export trading companies without fear of prosecution. However, this legislation failed to overcome industry's basic instinct to stay secret, private and independent.

In recent years there have been several abortive attempts to organize different companies in different product groups into organizations dedicated to countertrade. The idea was that, say, 'twenty' powerful companies specializing in 'twenty' important product groups, could cooperate in negotiating countertrade frame agreements with foreign governments in competition with the Japanese Zaibatsu. To date, however, these cooperative efforts among the major multinationals in the United States have all failed. "Countertrade America" has not come to pass. While common sense would suggest that such a combination would be very successful in competing for major multi-product frame agreements with

countries, and while such an export-oriented combination would be completely legal under the recent legislation, these efforts failed. The habits of secrecy and independent competitiveness played their role in explaining these failures. A fear of disrupting existing agency and sales systems, an understandable selfishness about retaining offset credit for their own accounts, a lack of real interest in establishing long-term countertrade agreements and mutual suspicions about business practices in various product groups all contributed, as did the hostility of the in-place countertrade specialists and bureaucracies in these companies, which felt their functions threatened. The well known American pre-occupation with immediate results also played a part in turning back complex, medium term efforts to organize "Countertrade America."

As agents for their parents, captive trading companies are marketing and/or financing devices and play no role in the broader causality of countertrade as a world phenomenon. The private trading companies, as experts, may play a role in facilitating large-scale countertrade deals. But in essence, countertrade involves long-term planning, state-to-state offset agreements, and multi-product involvement — a mix that does not play to the strengths of individual, opportunistic, often inexperienced US houses.

Overhead costs and high risks

Countertrade specialists remain in high demand because every major organization perceives a need to have its own capability in this area. This has generated a great deal of turnover of experienced staff as some respond to enticements from the new players. It is time consuming and expensive to train in-house countertrade specialists, presuming one has the in-house capacity to do so. It is also very expensive to keep them. Experienced personnel are taken away from revenue production to spend time on training. One also runs the risk of losing the newly trained personnel to competitors.

The overheads of countertrade groups are high. By definition a great deal of travel and wining and dining is required.

There are few economies of scale in countertrade, few "repeat deals." The deals, where they are completed, are usually one off — that is, oriented to a single transaction or series of transactions. Other deals involve different products and need to be negotiated with different people in different ministries. The pattern of the petroleum/grain deal done with Algeria may or may not be useful in Libya. Countertrade transactions are complex, time consuming, unique — labor intensive. For these reasons when they occur they do not necessarily offer high profit margins.

The ratio of countertrade transactions studied and/or pursued relative

to those consummated is extremely high. People engage in expensive investigative processes and work on many transactions which never happen.

Another major cost is the transaction risk itself — the risk that a partner in an agreement does not perform. Whether this performance failure occurs because of government intervention or displeasure expressed by the International Monetary Fund is immaterial. There is also a pricing risk in the products or commodities making up the countertrade. Given the tremendous volatility we have seen in recent years in basic product and commodity prices, many countertrade agreements have resulted in serious losses because of minimum/maximum pricing limits contained in CT agreements. There are quality risks and scheduling risks.

True, it is possible to argue that in difficulty there is opportunity and the greater the difficulty the wider the profit margin. There are sufficient examples of highly profitable countertrades undertaken by the major trading houses to have them continue in the business. Andre in Lausanne has run a profitable countertrade division for decades. Andre has not focused on the glamorous government-inspired deals which most current countertraders are chasing in much the same way in which international merchant bankers used to chase cheap centimillion dollar Arab loans. But countertrade is not the preferred or efficient way to conduct international commerce. It is costly and risky.

By definition, because the greatest amount of countertrade is government inspired or controlled, the services to be rendered by the major trading companies, be they privatization or whatever, are priced by the initiating or controlling agent. Since the value added is not large, the margins are not grand. Competition among the major traders may keep the price of privatization services to particular governments economical, but inevitably causes this business to be less profitable for the companies.

Given the enormous countertrade industry that has developed in recent years — the specialists, the literature, the studies — there is a risk that this huge bureaucracy could force the world to do more and more countertrade simply to preserve the existence of their structure. However, the evidence suggests that the inefficiencies, high costs and low profits associated with countertrade as it exists today will act to shrink the countertrade establishment rather than stimulate its further growth. Most of us in the major trading companies do not like this business and would much prefer to be operating the more efficient techniques on which we and the world economy have relied for many decades to oil the wheels of international trade.

How countertrade is linked to foreign direct investment

Thomas R. Atkinson

Governments often require foreign companies that wish to invest in their country — or even those with an established presence — to agree to certain export requirements. As these are designed usually to offset incoming shipments associated with the investment — capital goods or components — exports mandated by such agreements constitute a specialized form of countertrade. The origins of these practices, and the policy choices they pose for major international corporations, are outlined by Thomas Atkinson, Senior Adviser on the economics staff of General Motors Corporation.

The most common type of export requirement imposes a percentage of imports, share of production, or ratio of sales to be covered by exports. Such a requirement may have a number of variations depending on the urgency and flexibility of the host country government. In the automotive industry, for example, Mexico requires a higher level of exports relative to passenger car production if local content is below a set level. Viewed from the opposite point of view, Venezuela allows substitution of exports for local content. Australia under certain conditions accepts exports as a substitute for often more costly local production, making possible development of components manufacturing in world scale modules part of whose production is shipped abroad in return for imports of other efficiently produced components. Export requirements may be phased in over time on an informal "best efforts" basis (as in Egypt) or set as a cumulative contractual target (as in Brazil). The requirements, again in the automotive industry, may be compulsory, with penalties for noncompliance, or they may be optional contracts entered into in "compensation" for specific benefits, such as the right to import finished products for sale (Korea), to avoid extreme capital goods duties (Brazil), or to produce an additional product line (Mexico). Sometimes only limited credits may be allowed for production from favored locations (Mexican border zone) in order to encourage development of other areas or where local supplier capabilities are to be encouraged. A similar type of requirement, that producing firms must generate their own foreign exchange requirements through exports may ask companies to produce "exchange neutrality" (Mexico).

Export requirements as a development instrument

Apart from the generally acknowledged European origins of countertrade, the origin of export requirements, particularly in the motor vehicle industry, has been attributed to the Automotive Products Trade Agreement between the United States and Canada whereby in 1965 the two countries established a limited free trade area for original equipment, automotive vehicles and parts. To prevent the disappearance of the Canadian automotive industry, which for final vehicle manufacture was at that time entirely US owned, Canada insisted on producers meeting production-to-sales ratios and Canadian-value-added ratios that together required exports from Canada if a producer wished to market a full line of vehicles in that country.

While the Canadian export requirement was in the form of production-to-sales ratios necessitating exports, the first direct use of export requirements was said to be that of Mexico which promulgated by decree a program for the auto industry, allegedly following the lead of Canada.[1]

Export requirements as an instrument of growth policy apparently grew out of practical experience instead of as the brainchild of so-called development economists. In fact, the theoretical debates of the mid-1960s reflected only the hope that the industrialized countries would recognize their obligations to the less developed world. While Prebisch, perhaps the leader of his day in development economics, was calling for tariff preferences by developed countries for the industrial exports of LDCs, and others focussed on the problem of financing development, it was beginning to become apparent to policy-makers that the LDCs often had one key to industrial development within their grasp — the ability to force multinational companies, many already established within their borders, to invest for export as a condition for participating in the growing market the LDC offered. Particularly where a large investment had been made, the later imposition of export requirements contained an element of duress since violation would presumably mean inability to operate and therefore loss of the investment.

At first the acceptance of multinational corporations as a tool of development required something of a revolution in political-economic thought in LDCs; changing from the view that the MNCs were exploiters to the realization they could be used as an instrument for industrial growth and technology transfer.[2] The diseconomies of low-volume local production could be avoided even in smaller countries if domestic volume requirements could be extended by demanding that the company also produce for export. The automotive industry was perhaps the first target of these

requirements, but they soon spread to many other manufacturing activities of multinational companies operating in developing countries. Commonly, MNCs doing business in LDCs in the capital goods, electronics, airframe and pharmaceuticals industries tend to be saddled with some form of export requirements.

The rationale for export requirements as a development tool is that (1) LDC domestic production costs presumably may be brought down to internationally competitive levels through expanding volume by exporting, (2) technology may be successfully transferred to a developing country, (3) the MNC, in producing for its own use, also provides its own export market, and (4) both the specific foreign exchange requirements of the firm and those needs for currency generally created by a growing economy can be covered. In the view of developing countries, it seemed only natural to ask multinational companies that stood to gain from an economy's development as participants in the growth process also to shoulder some of the burdens — marketing its exports, transfering technology and earning foreign exchange. On a less elevated note, the assurances to LDCs that they were being given current technology could be quickly confirmed if exports to world markets were required. The other side of this, of course, is the MNC contention that production in LDCs may not always be economically justified for "leading edge" products and technology.

As with other forms of countertrade, these practices may have undesirable effects on a developing country and on the global economy. By creating a system of exports for imports, particularly where they are linked through intrafirm transactions, the economies of each good's production considered separately are lost and transactions take place that would not necessarily be done on a stand-alone basis. The result may well be that a high-cost industry is created on the basis of "sacrifice priced" imports or outmoded technology. Thus an LDC may build a steel industry based on of out-of-date rolling mill equipment sold cheaply to keep home country capital goods production going. The transaction is paid for by a flow of steel at below cost adding to the deficit of the LDC state steel enterprise. To support the local steel industry, protection is granted and other LDC industries using the domestic steel have higher costs built into their products which have to be offset by export subsidies if they are marketed abroad. Countertrade resulting from export requirements thus is one of an array of practices created by economic intervention that does not necessarily contribute to global efficiency.

The choice facing the multinational corporation

The MNCs for their part have to weigh the disadvantage of manu-

facturing for export in a new country for shipment either to other markets or to their own (captive) plants against the benefits they will presumably gain from being allowed to participate in a growing market, and one in which it is often understood that competition will be limited by the host government. In the negotiations between an MNC and a host country for the right to produce and participate in the market, the multinational firm may finally be forced to indicate its inability to manufacture and export profitably and presumably it will obtain some concession to make such activity worthwhile. Generally, the smaller developing countries tend to be more open to negotiations over the terms of the export requirements, whereas the larger countries have permanent programs from which they are unlikely to depart because of their bargaining strength. While countertrade requirements are usually viewed as a phenomenon of developing countries, even highly developed countries have been known to put pressure on multinational corporations to balance their trade by restructuring their production activities.[3]

Very rarely is a firm confronted with a direct decision to accept or reject the obligation to export in return for the opportunity to invest (and manufacture) in a country. At the extreme, multinational companies instead can find themselves well established in a country before the government mandates exports and thus their choice is to accept or withdraw from the country at possibly a considerable financial loss. At the other extreme, industrial development officials in host countries, realizing their lack of knowledge of industries singled out as potential exporters but wishing to avoid totally impractical demands, often consult with the companies at length about the precise nature of the export requirements to be imposed. Even this has its problems, however. It has on occasions led to the charge that US multinational companies and foreign governments have negotiated arrangements adversely affecting the interests of the United States without allowing the US government to be a party to these negotiations.[4]

Countries vary in their attitude toward the type of goods eligible to fulfill export requirements. Particularly in smaller countries where manufacturing of complicated products is often little more than local assembly of imported components, and the market is insufficient to create economies of scale, the MNC may choose from a long list of indigenous products, perhaps even raw or semiprocessed materials. Thus, a small Latin American country may require exports of semi-finished materials whose markets can realistically only be in the United States in payment for vehicle imports from a large Latin American producing country such as Brazil. Another Latin American country requires countertrade to be in manu-

factured products to encourage development of its own industries. Often there is some attempt to limit the countertrade eligibility of products that would find a ready export market anyway and thus require the MNC to find new products that will create additional exports, not merely substitute for those already regularly shipped. But the greatest volume of mandated exports, particularly in countries higher on the development scale, tends to be filled from manufactured components, sometimes of considerable complexity since the host government frequently wishes to promote technological development. While it is fairly easy for the MNC itself to determine its ability to produce from its own LDC subsidiary, at times the production is from an independent supplier with dedicated facilities, perhaps the subsidiary of another MNC located in the LDC with home country ties with the principal manufacturer.

The incentives to companies

In an ordinary transaction between independent parties conducted through the market there is presumed to be some advantage to both parties reflected in price. For countertrade between affiliated parties, particularly where the transactions are tied as, for example, components made to specification used as intermediate products to further production, and when the transaction is a condition of operation, the advantage may be much more complex. At least one element of the trade, perhaps the component manufactured in a developing country, may be transferred at a loss to be made up by within-country profits of the LDC subsidiary operating in a protected market. On the other hand, sometimes the required countertrade is merely to cover payment for equipment transferred from home country facilities. Clearly the transfer pricing of intermediate manufactured products is crucial to the economics of the transaction and it is doubtful that simulated arms length pricing can be sufficiently accurate to fix definitely the profitability of the project.

But it is not necessary to penetrate the complexities of intracorporate transfer pricing to obtain insights into the motives for "captive" countertrading between units of multinational companies. In the typical case the receiving division in the major industrial country with high costs and a larger market for specialized commodities, obtains lower-cost components in return for other parts that it can make cheaply because of high volume runs for its large home market. In the absence of export requirements many of these trades would have occurred anyway and there is always a limit imposed by tax authorities on how far corporations can internally "subsidize" specific international operations. Clearly, however, over the long-run, export requirements tend to be trade diverting and lead to

misallocation of investment to the extent that the investment is "subsidized" by the rents derived from being able to function in the protected LDC market. How much evidence is there that, as a general characteristic, countertrade is subsidized?

Clearly there is a mixed picture. Countertrade to create foreign exchange neutrality in countries with hard currency shortages, such as has been the case at times in China, is not necessarily subsidized directly, although a restricted market may create rents that can offset production diseconomies of required exports. The more typical scenario is a mixed LDC economy where mandated countertrade is only one of the many elements of government intervention. A typical case would be one in which a large, growing and protected LDC market is constrained by highly restrictive local content rules in many manufacturing industries. The LDC economy, typically, is characterized by heavy dependence on state enterprises whose subsidized output is important as inputs to many other manufacturing activities. Rather than direct subsidies that may raise international objections, some supplier industries may be given protection and also be extremely high cost. In such circumstances, LDC planners frequently feel that mandated manufacturing exports also need to be subsidized. Even the ability to cover losses on export sales by gaining profits in the domestic market may be circumscribed by price controls on final products. Mandated countertrade is thus only one of the characteristics that differentiate LDC economic systems from a fully market-directed economy. Thus, the imposition of export requirements leading to countertrade is only one part of the distortion to trade and investment stemming from LDC industrial policies.

It is not easy to generalize about the profitability or unprofitability of foreign direct investment to meet export requirements except to note that the corporation obviously requires at least the potential of overall profitability. It would be hoped that each product in the transaction, the home country export and the host country export, would be profitable in its own right. Failing this, a loss or potential loss on investment in production facilities for countertrade exports must be offset by profits on sales in the LDC domestic market or in profits on the home exports for which countertrade is the compensation. That relatively few existing overseas investments seem to have been abandoned as a result of the imposition of export requirements suggests that at least the prospective profitability of the package seems to be left intact. How much the expectations of the profitability of future operations at entry have to be inflated to offset what may be high-cost required exports is less apparent. The prize to the MNC is always the right to establish a presence in a protected market and the acceptance of the export requirement condition is one part of the price of

admission. (The calculation of future profitability under typical conditions prevailing in LDCs may require heroic assumptions on labor and material costs, inflation, exchange rates, interest rates, cost of exchange cover and market volumes. Needless to say, the acceptance of a proposed investment to produce to meet export requirements is seldom accomplished with complete confidence in the assumptions but is just one more risk of doing business that can only be imperfectly analyzed.)

If export requirements have forced investment decisions on corporations, one is entitled to ask why foreign sources for component manufactures were not considered before mandatory export requirements caused them to be searched out. Probably the answer is managerial inertia, plus the desire of the parent corporation to protect the sunk cost of existing investments in the home country. Multinational corporation initiatives in responding to export requirements, hence, are merely an aspect of what should be a ceaseless process of examining and reexamining all production alternatives as a routine part of management responsibilities.

In another essay in this volume it is pointed out that requirements for countertrade run foul of Section 301 of the US trade law (as a burden on US commerce) and also of Section 307, specifically empowering the government to duty, impose quotas, or exclude imports mandated by export requirements from US-owned facilities in place or committed to prior to the date of the 1984 Trade and Tariff Act.* On the other hand, existing GATT rules (as most recently determined in the Canadian FIRA case) do not recognize as illegal the imposition of export requirements even though they *per se* may be trade diverting, and for this reason the new US Trade Act authorizes the US Trade Representative to "compensate" by equivalent concessions to other countries for measures taken against imports under Section 307.

While these legal provisions do not specifically apply to "captive" countertrade between units of the same company, the problems are the greatest in these circumstances since captive countertrade implies investment and, therefore, "permanent" changes in sourcing with all this means to labor relations, jobs, communities, local politics, etc. in the home country or other larger markets to which the exports are shipped. Consequently, US direct investors abroad faced with the decision to meet export requirements undoubtedly feel vulnerable to moves by US trade authorities to reduce the use of these measures by developing countries.

Countertrade as a form of capital flow

Countertrade may also represent a means of paying for some aspects of foreign direct investment. Thus, for example, machinery and equipment

* See Carmen Suro-Bredie (*op cit*)

for production may be shipped against return flows of future product. Again, product design and production engineering services or even turn-key plants may be compensated by return flows of the goods produced. The compensation or debt-service method and schedule may be specified in the investment agreement or may take the form of more casual day-to-day transactions to liquidate previously accumulated trade debts. Thus countertrade can replace some capital transactions connected with foreign direct investment.

Where countertrade is indeed a substitute for a financial transaction such as a loan from a parent to a subsidiary or perhaps an equity injection plus local borrowing, it bears an implicit interest rate. Furthermore, the exchange risk is hidden in the transaction. A serious defect of countertrade is that little can be said of a definitive nature about the interest cost and exchange risk or thus about the true economic terms of the transaction.

Trade creating or trade diverting?

If the type of "captive" countertrade described here is largely a substitute for transactions that would otherwise take place, it is questionable whether *fewer* people are at work globally as a result. Financing requirements are likely to be fairly simple, with offsets on intracompany account books bearing the bulk of the burden. While "merchant" countertrade consisting of independent transactions in diverse products tends to obscure, if not eliminate, exchange risks, by reason of the tied, simultaneous trades involved, "captive" intracorporate countertrade ties the profitability of a long-term investment made in a particular year to a stream of receipts for components spaced over several years. In this situation, where the conventional methods of insuring against exchange risks seldom apply, the company may hope for another form of protection, namely, that the economic condition of the LDC market and thus the fortunes of the subsidiary may improve sufficiently to offset unfavorable movements of the exchange rate and thus changes in the cost of the exported product. This is in addition to the automatic compensation to the corporation as a whole arising from offsetting flows transacted in the same pair of currencies as the rate changes; i.e., Mexican engines become cheaper in the U.S., as a result of a peso devaluation, offsetting the higher cost of stampings sent to the Mexican subsidiary.

Economic and financial encouragements to "captive" countertrade

As has been shown, "captive" countertrade almost certainly was created originally as a development strategy and was encouraged by the belief that induced foreign investment was a useful instrument of LDC

development policy. There is little doubt, however, that the LDC debt crisis has created a new impetus to the encouragement of countertrade, both "merchant" and "captive." While the various exchange control measures adopted by debt-ridden governments to stem capital flight and conserve foreign exchange make it more difficult to sustain manufacturing which requires imported materials, countertrade offers at least a partial solution to some of the difficulties involved, especially where it produces flows of standardized manufactured products for use in other MNC facilities in the home country.

To what extent is "captive" countertrade encouraged by either currency volatility or long-lasting swings in real exchange rates? As a group, the LDC currencies tend to progressive depreciation as a result of domestic inflation and deteriorating terms of trade. Countries are motivated to adopt export requirements to sustain needed imports as well as to help in servicing debt as immediate direct benefits. But it is by no means obvious that it is the flexible currency system rather than the underlying forces that create the incentives for captive countertrade, because there probably would be even tighter control over payments if exchange rates were relatively fixed and reserves bore the brunt of shifting trade flows. Furthermore, many of the currencies of LDCs even under present flexible rate regimes are "pegged" to a basket of currencies of their trading partners, particularly the dollar, even though the "peg" tends to be adjusted downward at all too frequent internals. A revitalized Bretton Woods system through an expanded IMF, making possible a structure of fixed rates for most developing countries vis-a-vis the dollar or other principal currency, is probably too much to expect. To the extent that capital flows and "overshooting" have driven the dollar up and reduced the competitiveness of US home manufacturing, the search for cheaper manufacturing may have made sourcing abroad with captive countertrading commercially attractive. But to the extent that LDCs continue to be characterized by depreciating but persistently overvalued currencies, the current exchange rate regimes among the principal currencies may be of a second order of importance.

Countertrade in MNC strategic planning

To the extent that the recent debt crisis intensified LDC demands upon multinational corporations to cover their own exchange needs through countertrade and mandated exports, it caught many companies at a time when their overseas subsidiaries were in relatively poor financial condition. Such limited foreign direct investment as occurred during the crisis period was obviously influenced by the need to sustain operations where existing

plants required help in dealing with both their own financial situation and host country regulations. On the other hand, the debt crisis came at a time when many home country facilities were facing intense competition and were looking for offshore, lower cost sources for some components.

In general, the rising tide of regulations governing countertrade operations by multinational companies based on additional foreign direct investment do not substantially alter strategy, although they do add a new dimension to decisions on where a new facility can be profitably located. A number of multinational corporations have established trading companies to assist their subsidiaries in carrying out required countertrade. In the process of adapting to export requirements, there is likely to be a substantial change in the philosophy of management of an MNC away from decentralized decisions by largely independent units toward coordination of decision-making at the top to optimize the use and capabilities of the individual units. This requires individual unit managers to become aware of the ways in which their operations can be integrated into those of the other subsidiaries of the MNC parent.

If corporate transfer prices and management incentive systems are correctly structured, the captive countertrade generated by offshore supplier operations of multinational corporations is probably best dovetailed into the performance requirements of the operating units located in LDCs in a manner that minimizes interference with market-directed trade patterns. The normal mechanisms of searching out least cost sources are then performed by supplier divisions with assistance from international personnel aware of export requirements.

* * *

Export requirements placed on foreign direct investment which give rise to countertrade represent one more form of market intervention similar in a way to tariffs, quotas and subsidies. They can be regarded as distorting trade and investment flows from what would otherwise take place in a free market, with effects on economic efficiency and consumer welfare. They can be looked upon as destructive to the multilateral payments system by forcing the linking of transactions. And they can be seen as benefitting one country at the expense of others. A careful analysis would doubtless show examples of all these deleterious effects. Yet countertrade does not exist in a vacuum but instead is in part a response to imperfect financial markets and sticky corporate investment decisions which may well not lead to searching out least-cost manufacturing locations. Under these conditions, can it be said that world income and employment would be less as a result of required countertrade than if it did not exist? And can it be said that in a world in which international financial and trade controls are a fact of life,

countertrade is bad even though it may allow production to continue despite these difficulties? The case for countertrade is strongest where the products on both sides of the transaction are complementary as in the typical case of captive countertrade between parts of the same corporation.

Lacking quick investment reactions by corporations in response to manufacturing opportunities in LDCs and in the absence of smoothly functioning exchange markets, unhampered by any need for controls, penalization or forced elimination of countertrade may not be in the general global interest or even in the interest of a particular country. Indeed, while export requirements leading to countertrade are a form of market intervention, measures against countertrade contain elements of protectionism. While it is extremely difficult to substantiate the case, the willingness of multinational corporations to accept (or reject) countertrade requirements is probably the best assurance that the allocation of investment is not completely artificial.

[1] Baranson (1969) pointed out that automotive firms had gone through the export phase in market relations with developing countries and then the second phase, the establishment of local production. "In the past year or two, foreign firms have found themselves being urged into 'Phase III.' Certain developing countries, such as Mexico and Yugoslavia, have been bargaining for export capacities to be built into their manufacturing operations to help pay for continuing import requirements. In this they have in effect followed the lead of Canada whose trade agreement with the United States has resulted in a substantial increase in Canadian parts manufactured for the U.S. market. ..." Jack Baranson, *Automotive Industries in Developing Countries*, World Bank Staff Occasional Papers Number Eight, Distributed by the Johns Hopkins Press, Baltimore, Maryland, 1969, p. 14.

[2] Harry G. Johnson attributes the initial exploration of this development technique to Jack Baranson's doctoral dissertation, "Technical Adjustment in a Developing Economy: A Study in the Transfer of Technology by an International Corporation." (Doctoral Thesis, Indiana University, 1965). Johnson also points out the elements of the changes necessary in development policy. See Johnson, Harry G., *Economic Policies Toward Less Developed Countries*, Brookings 1967, pp. 77-8.

[3] For a discussion of export requirements as part of the industrial policies of Mexico, Brazil, and Australia see Atkinson, Ezrati & Flynn, "The Experience of the Automotive Industry with Industrial Policies of Selected Countries," *Policy Perspective on National Industrial Development*, VI Mich. YB. Int'l Legal Stud., (1984) (forthcoming).

[4] Bergsten, C. Fred, Statement on U.S. policy toward International Investment, Hearings Before the Subcommittee on International Economic Policy of the Committee on Foreign Relations, U.S. Senate, July 30, 1981, p. 5, 15 U.S. Government Printing Office, 1982.

Trends in military offsets

Ronald J. DeMarines

About half export sales of US military equipment carry "offset" obligations. This is one of the findings of the recent study by the US International Trade Commission of barter and countertrade transactions, described in the following article by Ronald J. Demarines, project leader of the study. The views expressed are those of the author and not of the International Trade Commission.

The practice of military offset as we know it today has its roots in western Europe after World War II. In the early post-war period, offset practices involved arrangements whereby West Germany would "offset" some of the enormous cost of keeping US (and British) NATO troops on its soil. Under negotiated US-West German offset arrangements, West Germany agreed to provide much of the facilities and services necessary to house the US military. The US-German agreements served as a basis for current military cooperation agreements among NATO member countries. Such an agreement is commonly referred to as a memorandum of understanding (MOU) or memorandum of agreement (MOA). Modern offset programs are an outgrowth of these MOUs and MOAs. Governments have to approve the sales of military equipment involved, but the offset programs themselves are entered into by defense contractors and are not guaranteed by the US government.

In the face of international competition for such defense sales, US defense contractors are under increasing pressure from foreign governments to undertake a broad range of offsets, as a condition of being awarded the contract. These practices include co-production, licensed production, subcontractor production, overseas investment, and technology transfer. Offset arrangements can be further divided into direct and indirect. *Direct offsets* include any business that relates directly to the product being sold; for instance, a defense contractor may arrange for a company in the buying country to produce part of the product being sold, such as the tail section of a fighter aircraft. *Indirect offsets* include all business unrelated to the product being sold. An example of indirect offsets was the 1975 Swiss Government purchase of 72 F-5 aircraft manufactured by Northrop Corporation. The US[1] and Swiss Governments signed a MOU in which Northrop agreed to a minimum of 30 percent offset of the $400 million purchase

price. By the targeted completion date of July 1983, more than $200 million had been offset, surpassing the $120 million originally agreed to. The offset included assisting in the export of Swiss goods and services in Egypt, Saudi Arabia, Turkey, Paraguay, and Indonesia.[2]

US defense contractors cite several reasons for entering into offset obligations. The primary reason is simply the fact that offsets are required by foreign governments as a condition of awarding the sales contract. To a lesser extent, offsets are agreed to in order to maintain a firm's foreign-market share. In the latter case, offsets may not be mandated by the foreign government, but they may be entered into voluntarily by the seller. Also a reason provided for voluntary entering into offsets is to give a competitive advantage to the seller's products. Rarely are offsets entered into to help the buying country finance the purchase or to assist the seller in repatriating blocked currencies — two reasons commonly cited in nonmilitary countertrade.

Measuring the level of offsets

There are three criteria that can be used to measure the magnitude of military offsets:

- The total value of export sales agreements with which offset commitments were associated.
- The value of the actual offset obligation associated with export sales contracts. (In a military export sale, the obligation agreement may be signed at the time the export sales agreement itself is signed but is more likely to occur at a later date, perhaps as long as two to three years after the original sale).
- The value of the offset obligations actually fulfilled. Fulfillment of obligations tends to vary in proportion to the value of the obligation and may take more than 10 years to complete.

Export sales agreements with offsets

In a recent survey by the US International Trade Commission (U.S.I.T.C.).[3] the respondents indicated that the value of signed military export sales agreements with which offsets were associated — the first criteria for measuring offset magnitude — totaled $22.5 billion during the survey period of 1980-84, an average of $4.5 billion annually (see table 1). More than 80 percent of the reported value of military export sales agreements involved aerospace products, and offsets were associated with roughly half of the *total* military-related export sales reported to the U.S.I.T.C.

As reflected in table 1, export sales agreements containing offsets were

subject to significant year-to-year swings. They were at their highest level in 1980 — $6.6 billion and 94 percent of all reported military sales — and their lowest in 1982 — $732 million and 7 percent of sales. The severe annual fluctuations in the value of reported military-related export sales are a reflection of the sporadic flow of major weapon system purchases by foreign governments. (It is important to bear in mind that the data discussed thus far represent signed contracts and *not* actual shipments. Actual shipments of military-related products may lag behind the signing of the sales contract by as much as three or four years.)

Table 1. — Reported value of respondents' total US military-related export sales, and the reported value of US military-related export sales associated with offsets, 1980-84

	Collective U.S. military export sales (million dollars)	Collective face value of sales contracts associated with a military-related sale involving offsets (million dollars)	*Ratio of sales contract with a military-related export sale to total US military exports (percent)*
1980 —	6,964	6,568	94
1981 —	8,907	4,919	55
1982 —	10,315	732	7
1983 —	10,428	4,377	42
1984 —	11,222	5,890	52
Total or average	47,835	22,486	47

Source: Compiled from data submitted in response to questionnaires of the US International Trade Commission.

A regional breakdown, provided in table 2, shows that military-related US sales associated with offsets to NATO-Europe countries accounted for $8.3 billion during 1980-84. Such sales to Asian countries, including Israel, Japan, and Turkey, accounted for $7.3 billion, while export sales to all other countries were valued at $6.4 billion. The "all other" category was heavily influenced by sales to Canada and Australia.

The offset obligations

The most important measure of the magnitude of offsets, however, is the second of the three criteria mentioned earlier — the offset obligation. According to the respondents to the U.S.I.T.C. survey, total offset obligations signed during the survey period were valued at $8.8 billion. Comparing this $8.8 billion with total reported military-related export sales associated with offsets, shows that the overall offset obligations accounted

for about 39 percent of sales during 1980-84. However, the offset-to-sales ratio in US transactions with NATO-Europe averaged almost 60 percent. The average offset-to-sales ratio steadily increased from 6 percent in 1980 to a peak of 76 percent in 1983 and then declined to 37 percent in 1984.

Table 2. — Total value of goods and services to be supplied in sales agreements in which offsets were negotiated, by region and years contracts signed 1980-84

(In millions of dollars)

Region	1980	1981	1982	1983	1984	1980-84
Europe:						
NATO countries	2,434	874	212	3,339	1,398	8,257
Non-NATO countries	158	328	40	52	17	595
Subtotal	2,592	1,202	252	3,391	1,415	8,852
Asia	1,335	853	63	718	4,301	7,254
All others	2,641	2,880	417	269	174	6,381
Total	6,568	4,919	733	4,378	5,891	22,489

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Note: Because of rounding, figures may not add to the totals shown.

Data from the U.S.I.T.C. survey reveal that during 1980-84, US firms were accepting larger offset obligations in the face of increased international competition for military export sales. The decline in the ratio of obligation to sales in 1984 was not necessarily an indication of the beginning of a downward trend, but rather a reflection of the fact that not all obligations associated with 1984 sales agreements had been signed during 1984. Because offset obligations may be signed two or three years after the export sale, some obligations associated with reported export sales in 1980-84, would not show up on the U.S.I.T.C. survey results. To the extent that this occurred, the $8.8 billion in offset obligations reported above would understate the actual value of obligations associated with sales in 1980-84.

NATO-Europe accounted for more than half (or $4.6 billion) of all reported offset obligations signed during 1980-84 (see table 3) while Asian countries (including the Middle East countries Israel and Turkey) accounted for 20 percent of total obligations.

Although most of the offset obligations were assumed by the prime contractors, in many cases major subcontractors were also asked to share some portion of the offset burden. This shared arrangement is often advantageous for both the prime and the subcontractor, since both have much to gain if the prime is awarded the export sales contract. Sometimes the sub-

contractor may negotiate an offset directly with the buyer on behalf of the prime. During 1980-84, subcontractors assumed almost $1 billion or 11 percent of their primes' obligations.

Table 3. — Collective value of offset obligation, by region and years offset agreements were entered into, 1980-84

(In millions of dollars)

Region	*1980*	*1981*	*1982*	*1983*	*1984*	*1980-84*
Europe:						
NATO countries	159	275	52	3,024	1,128	4,638
Non-NATO countries	—	300	106	40	93	539
Subtotal	159	575	158	3,064	1,221	5,177
Asia	236	553	98	160	799	1,846
All others	15	1,423	183	20	162	1,803
Total	413	2,551	440	3,244	2,182	8,830

Source: Compiled from data submitted in response to questionnaires of the US International Trade Commission.

Note: Because of rounding, figures may not add to the totals shown.

Fulfillment of offsets

The third measure of the significance of offset transactions is the actual fulfillment of the obligation. Since fulfillment may take as long as 10 years to complete, it is not unusual that fulfillment of obligations signed during 1980-84 amounted to slightly less than $3 billion or only 31 percent of total obligations. More than half of the reported offset fulfillment involved aircraft components.

The defense contractors' perspectives

It is not surprising that defense contractors would prefer to sell their products for hard currency rather than submit to the complex arrangement of offsets. Unfortunately, however, international competition for defense sales plays in the hands of the buying countries who continually force up the bid of the competitors. Some recently signed offsets committed the seller to satisfy obligations valued at more than the contract value of the sale. The payoff to the contractor who offers the best offset package often is being awarded the sales contract.

From the contractors' perspective, being awarded the contract means that they will be able to maintain or increase existing levels of employment and plant capacity because of new business generated by contracts

containing offsets. Further, the added business may result in more efficient production runs, lower unit costs, increased capital formation, and the development of new technologies. According to the majority of corporations responding to the Commission's questionnaire, offsets *have not* adversely affected the competitiveness of their companies even after the enormous marketing costs associated with satisfying offsets are factored in. However, some US companies expressed concern over the potential impact on their business from foreign competition emerging from the implementation of offset transactions. This concern arises from offsets requiring technology transfer and licensed production resulting in the creation of new foreign competitors.

Other perspectives

From the point of view of the subcontractor, offsets are generally thought of as good business because if the prime is awarded the contract, the subcontractors stand to gain through added business with the prime. However, if the implementation of offset commitments results in creating or enhancing new foreign sources of components, then the displaced US subcontractors may take a different view. According to the Commission's survey, 24 out of a reported 40 new or enhanced foreign sources of defense-related goods and services emerged in the manufacture of aircraft and parts, turbines and engines, and electronic components. Australia and Israel were named most frequently as new sources of supply for defense-related products and services, followed by Denmark, Norway and the United Kingdom.

The use of indirect offsets by prime contractors also has its critics in nondefense industries. Representatives of the steel industry, the travel industry, and the fastener industry have stated that offsets are part of the cause of increased imports affecting their industries' goods and services. The findings in the U.S.I.T.C. investigation did not, however, support these claims. In fact, total imports associated with offset arrangements totaled a mere $211 million during 1980-84, or less than 0.2 percent of total US imports during the period.

The trend in offsets

Offset requirements exist in several countries, the most notable are Israel, Australia, Greece, Korea and Turkey, and more countries are adding offsets as a condition of the purchase of major weapon systems. Saudi Arabia, for example, has required oil offsets for much of its purchase of the "peace shield" defense system. Other oil exporters, including Iran, Iraq, and the United Arab Emirates, have used oil to finance their purchases of

defense equipment. In all, US defense contractors identified 23 countries in which offsets had been negotiated during 1980-84. On balance, these countries tended to be industrialized and closely allied to the United States in terms of military cooperation.

NOTES

[1] It is important to note that the US Government was the guarantor of the offset in this arrangement. Problems associated with satisfying the offset in the early period of the program, in part, led to the Duncan Memorandum in 1978 suspending DOD guarantees on offsets except for deals already in progress.

[2] Peter Harben, "Offset Overview," Countertrade and Barter Quarterly, Autumn, 1984, p. 36.

[3] The U.S.I.T.C. collected questionnaire data from more than 150 firms having offset obligations resulting from military-related export sales.

Official views on countertrade

Carmen Suro-Bredie

Carmen Suro-Bredie, Deputy Assistant Trade Representative for Europe and the Mediterranean, describes the interests of the various international organizations in the development of countertrade and summarizes the views of the US government.

The view from the GATT

Although the consequences of many forms of countertrade appear similar to the consequences of other practices which are illegal under the GATT, countertrade itself has not been found to be illegal as there is no reference to it in the articles of the GATT. That countertrade and other forms of mandated counterpurchase violate the spirit of the open, market-determined, multilateral trading system sought by GATT, however, is in little doubt.

GATT rules regulate the behavior of governments — not individual businesses — and only a handful of GATT members mandate countertrade by law. Most of the other GATT members, practicing one form or another of countertrade, do so using more informal mechanisms — such as regulations and administrative guidance. This makes the probability that a case will be brought before the GATT quite slim. It is also unlikely that the GATT, which operates by consensus, will reach agreement on a practice which, while contrary to the very nature of the multilateral trading system, has been used by almost all its members at some time in the last ten years.

Despite the lack of consensus on countertrade among the major trading nations, GATT discussion has been useful in alerting these countries to the dangers of increased bilateralism. We know that the GATT Secretariat estimates that countertrade accounts for about 8 percent of the world's merchandise trade.[1] Should this figure increase markedly, we would expect GATT discussion to resume.

From the OECD

By contrast to the GATT, the OECD has been quite outspoken on the dangers of countertrade. In 1981, the OECD published a document entitled *East-West Trade: Recent Developments in Countertrade*.[2] This warned that eastern countries will maintain their pressure to incorporate

countertrade in their trade deals with the West, not just because of their lack of hard currency but because of the lack of competitiveness of their industrial products. The Secretariat counsels its members not to adopt an attitude of benign neglect to practices that have been imposed unilaterally lest they affect negatively all transactions between East and West.

OECD members have a more tempered view of North-South countertrade. This attitude is largely due to concerns about the economic recession and the debt crisis which dissuade the major developed countries from taking on the developing countries, particularly if North-South countertrade remains modest.

The OECD Secretariat's analysis of the volume of countertrade arrives at a figure substantially smaller than the GATT's or approximately 4.5 percent of world exports. The OECD finds that in the short term, countertrade operations may provide the possibility of selective devaluation — assigning a price where the price system no longer allows realistic appraisal of the goods in question. However, this allows the government to maintain the economic distortion instead of correcting the deficiencies in the exchange rate system. While countertrade may be an understandable reaction to short-term constraints during an adjustment process, in the long term countertrade transactions carry few obvious benefits. The advantages of opening new markets through countertrade for primary products may be illusory as import demand for many of these goods is inelastic. Any inroads will be at the expense of other LDC competitors inviting price cutting and retaliation. Also, the Secretariat warns that disguised attempts at dumping or subsidization which countertrade may offer cannot continue without the risk of trade actions by the developed countries. The Secretariat concludes that while countertrade is widespread, it has not been incorporated in the trade policies of developing countries. The regressive nature of the system makes it an unlikely avenue for long term adjustment.

From the IMF and the World Bank

The International Monetary Fund's experience with bilateral payments arrangements dates back to its inception. Article I of the Articles of Agreement says that the primary purpose of the Fund is to "assist in the establishment of a multilateral system of payments . . . and in the elimination of foreign exchange restrictions which hamper the role of world trade." This places the Fund squarely behind a system which allows goods to be exchanged through a market pricing system. Nevertheless, in most instances, the countertrade and barter practices of the Fund's members are not subject to the legal jurisdiction of the Fund. The Fund's formal

approval under Article VIII is required only when countertrade or barter is government mandated and the requirement is imposed by restricting the payments side of the transaction such as an outright blocking of funds. Most transactions do not fall in this category.

The Fund does not try to quantify the amount of world trade involved in countertrade since most of these arrangements are private and therefore not reported to the government. Where governments use these practices to trade strategic goods, the transactions are also not reported.

The Fund believes that the emergence of these somewhat primitive techniques of trade may be linked to the number of Fund member countries which are seriously in arrears on their external payment obligations. Exporters take refuge in countertrade arrangements when the central bank in the importing country is experiencing severe shortages in foreign exchange. To the extent that the Fund policies have been successful in diminishing arrears, they have also blunted the resurgence of countertrade and barter on a large scale. The Fund's outlook on the use of countertrade could best be characterized as guardedly optimistic and directly related to exchange rate adjustment by all Fund members. As many developing and Eastern countries recover from the economic recession, their penchant for countertrade may diminish.

The World Bank has no official position on countertrade and its Board has not met on the subject. Bank staff however are known to view these practices as inefficient and unnecessarily circuitous.

US Government Views on Countertrade

US government interest in the effects of countertrade on the trading system dates back to a section 332 study completed by the International Trade Commission in March 1982.[3] This type of study is used by the Commission to provide information on topics of potential interest to the Congress and the Executive Branch. In this case, the findings were of sufficient interest to merit the formation of an interagency group on countertrade chaired by the Office of the US Trade Representative and composed of representatives of the Department of Commerce, Agriculture, State, Treasury, Labor, Justice, Defense, and the United States International Trade Commission. At the policy making stage, this group was expanded to include representatives of the Office of Management and Budget, the Council of Economic Advisors, the National Security Council, the International Development Cooperation Agency, the Export-Import Bank and the Overseas Private Investment Corporation.

In developing a policy on countertrade and barter, the interagency group reviewed the use of these practices in market and non-market

economies, the costs and benefits to the countries involved, the implications of countertrade and barter on the General Agreement on Tariffs and Trade (GATT), and past policy statements by other developed countries in the context of the Organization of Economic Cooperation and Development (OECD). Government officials reviewed the history of US government involvement in barter transactions and the applicability of US trade laws. This research was supplemented by interviews with countertrade practitioners and companies opposed to the practice. The major challenge faced by this group was to design a policy which would deal with the conflict between US objectives of multilateralism and the practical necessities of aiding US business interests faced with countertrade requirements.

Another potential conflict was posed by the US government's own authority to barter agricultural surplus held by the Commodity Credit Corporation for defense-related materials for the strategic stockpile. US authorities bartered extensively from 1950 to 1973 ($6.65 billion). However, the practice fell into disuse because barter trade cannibalized cash markets and triggered retaliation by our trading partners whose markets were displaced by barter. As a result, US government barter has been used only once since 1973.[4]

In order to reconcile these competing interests, the interagency group met at sub-cabinet level to determine the US government position on barter and countertrade. Their recommendations included:

1. The US government generally views countertrade as contrary to an open, free trading system. However, as a matter of policy, the US government will not oppose US companies' participation in countertrade arrangements unless such action could have a negative impact on national security.
2. The US government will provide advisory and market intelligence services to US businesses including information on the application of US trade laws to countertrade goods.
3. The US government will continue to review financing for projects containing countertrade/barter on a case by case basis, taking account of the distortions caused by these practices.
4. The US government will continue to oppose government mandated countertrade and will raise these concerns with the relevant governments.
5. The US government will participate in reviews of countertrade in the IMF, OECD and GATT.
6. The US government will exercise caution in the use of its barter authority reserving it for those situations which offer advantages not offered by conventional market operations.

Since 1983, US government officials have met with their counterparts in the Soviet Union, Indonesia, Australia, Greece, Yugoslavia, Romania and Colombia to discuss mandated countertrade. In addition to bilateral meetings, policy making sessions were held in the GATT and the OECD on the subject as discussed earlier in this paper.

In implementing the US government policy on countertrade as it applies to the private sector, US government officials have participated in a myriad of countertrade conferences to discuss US opposition to mandated practices and to provide information on the effect of US trade laws on countertrade transactions. The Department of Commerce and its Foreign Commercial Service assist companies by providing market intelligence and briefings on host government practices. Various US government publications describe these practices in some detail.[5]

There has also been considerable Congressional interest in US government policy on countertrade and barter and its effect on business practices. In October 1983, the House Committee on Armed Services held hearings to expand the Government's barter authority.[6] Administration witnesses described the difficulties encountered with past barter policies, the implications of a return to bilateral practices and concluded that less rather than more barter should take place.

Pro-barter Congressional interest contrasts with growing Congressional concern with offset transactions and their impact on the transfer of technology and the defense industrial base. These concerns resulted in a US General Accounting Office study, Congressional hearings and legislation which calls for a comprehensive report to Congress on offsets originally due in October 1985.[7] In preparation for this study, the International Trade Commission sent a mandatory questionnaire to over 600 companies to determine the effects of barter, countertrade and offset transactions on US industries.[8] Congressional interest in offsets is likely to continue since this is the fastest growing segment of countertrade.

Aside from potential Congressional controls on countertrade, restraints imposed by US trade laws apply to all commercial transactions including countertrade. Violations of the trade laws involving countertrade have been insignificant until now. Some observers credit this to the paucity of countertraded imports entering the United States since most American companies dispose of these goods in third country markets. However, if these markets become saturated or if countertrade contracts require import to the home country of the contractor, the incidence of these imports will increase.

To date, the most famous case involving countertraded goods is the section 406 case on anhydrous ammonia from the Soviet Union. Another series of cases involving countertraded goods were the recent counter-

vailing duty cases on textiles filed against Portugal and Indonesia. The petitioner alleged that government mandated countertrade programs constituted an export subsidy because they require export sales that would not otherwise occur. The petitioner suggested that the subsidy should be measured as the difference between the revenue from counterpurchase sales and the variable cost of production. The petitioner also alleged that countertrade provided free government marketing services which were countervailable benefits. Had these alleged benefits been found and measured as the petitioner suggested the countervailing duties in these cases might have increased substantially. However, both cases were withdrawn by the petitioner when these countries acceded to the GATT subsidies code leaving open the question of how the Department of Commerce would rule.

Countertrade requirements could also run afoul of two other provisions of US trade law — Section 301 of the Trade Agreements Act of 1974 and Section 307 of the Trade and Tariff Act of 1984. Under Section 301 as amended, the President is required to take all appropriate action, including retaliation, to obtain the removal of any act, policy or practice of a foreign government which violates an international agreement or is unjustifiable, unreasonable, or discriminatory and burdens or restricts US commerce. A 301 case might be brought if a countertrade program contained an element of subsidy or if it appeared that an offset was used as a form of governmental inducement determining who a contract went to.

As mentioned in another essay, Section 307 action also may affect countertrade aspects of foreign direct investment. The law authorizes the office of the US Trade Representative to impose duties or other import restrictions against products and services of countries using export performance requirements. An exception is made for US investment subject to these requirements before October 30, 1984, the date of enactment of the Trade and Tariff Act. To date, this section of the Act has not been used.

Notes

[1] *Wall Street Journal*, April 17, 1984, p. 38.

[2] *East-West Trade: Recent Developments in Countertrade* Organization for Economic Cooperation and Development (OECD) Paris 1981.

[3] U.S. International Trade Commission, *Analysis of Recent Trends in US Countertrade* USITC Publication 1237, Washington, D.C. March 1982. This study estimates that US imports from countertrade totalled $279 million in 1980, a threefold increase over 1974 figures. The Commission cautioned that this data understates the full dollar importance of US countertrade.

[4] In 1982-83, $2.6 million tons of Jamaican bauxite were exchanged for US dairy products held by the Commodity Credit Corporation. See *US Government International Barter* — by Donna Vogt; Congressional Research Service HG538, Washington, D.C.

[5] *International Countertrade: A Guide for Managers and Executives* by Pompiliu Verzariu U.S. Department of Commerce; International Trade Administration: November 1984 Washington, D.C.

[6] Hearings on H.R. 3544 before the US House of Representatives Committee on Armed Services — Subcommittee on Seapower and Strategic and Critical Materials, October 19, 1983.

[7] *Trade Offsets in Foreign Military Sales*, United States General Accounting Office GAO/NSIAD -84-102; April 13, 1984, Washington, D.C.
Hearing on Countertrade and Offset Arrangements U.S. House of Representatives Committee on Banking, Finance and Urban Affairs, Subcommittee on Economic Stabilization, May 22, 1984.

[8] The results of this survey are reported in the opening article in this volume, pp. 7-8 and in the article by Ronald Demarines, pages 64-70.

[9] Imports of anhydrous ammonia were reviewed twice under section 406 of the Trade Act of 1974, a special provision which allows for relief if imports from Communist countries disrupt a US market.

Publications

Study Group Reports:

Toward a Less Unstable International Monetary System
The Reserve Assets Study Group

Foreign Exchange Markets Under Floating Rates
The Exchange Markets Participants' Study Group

Balance-of-Payments Problems of Developing Countries
The Capital Movements and the Growth of International Indebtedness Study Group

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Edited by Richard J. Herring,
Cambridge University Press, 1983.

Managing International Risk
Edited by Richard J. Herring,
Cambridge University Press, 1983.

Based on essays and perspectives presented at a conference entitled "Managing international risk," held in Philadelphia, Oct. 26–27, 1981, sponsored jointly by the Global Interdependence Center, the Group of Thirty, and the Wharton School, University of Pennsylvania.

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Address inquiries to:
The Group of Thirty
725 Park Avenue
New York, New York 10021
(212) 988-5544

R5025-1.17-F

Outlook for Mineral Commodities

R.H. Carnegie

Published by
Group of Thirty©
New York
March 1986

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Outlook for mineral commodities

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Outlook for mineral commodities

Introduction

The global minerals industry is undergoing a radical transformation. This paper explains the causes of this upheaval and outlines the industry's response.

As this is written early in 1986, metal prices remain depressed. However, stocks are no longer as excessive as they were in 1983-84. The restructuring of the mining and smelting sectors is continuing. New additions to capacity are limited. Parts of the industry are shifting from developed countries toward the sources of the minerals and/or energy. The generally poor profit performance of the industry is likely to slow investment and deter new participants.

Eventually, demand will recover, perhaps initially in Asia as per capita incomes rise. Also, by the 1990s much of the world's infrastructure will need replacing after the relative lack of investment in the 1970s and 1980s. Such a scenario promises better fortunes for the industry in the 1990s.

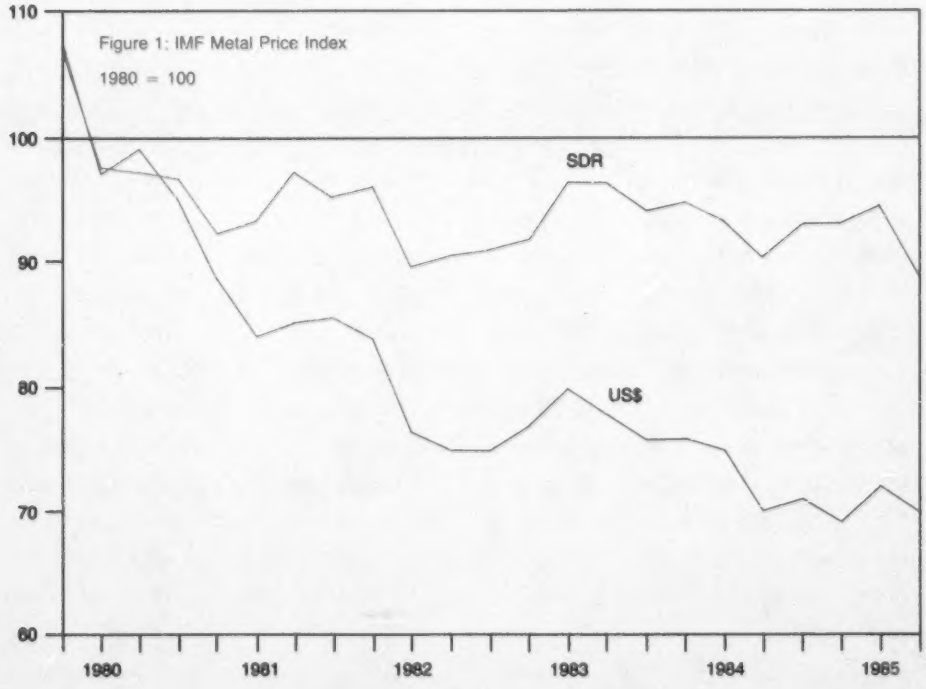
In the paper "the minerals industry" means both ferrous commodities (i.e. iron and steel) and non-ferrous (eg copper, lead, zinc, nickel, aluminium) commodities from raw materials through to metals. Some important characteristics of the mining and metals industry are outlined in the Appendix.

R.H. Carnegie
January, 1986

The current upheaval in the industry

The basis for the current upheaval in the industry is a fundamental change in demand and supply conditions over the past 10-15 years. These can be summarized simply — the rate of growth of demand has fallen, supply has risen, with the result that real metal prices have plummetted. Profits have been disastrous.

Figure 1 shows the IMF index of US dollar nominal metal prices and the fall of nearly 30 percent in the last five years. Converting this to SDRs still brings a fall in nominal terms over the period. While this is good news to consumers (particularly those in the United States) it is bad news for producers. A major theme of this paper is that whilst prices in real terms will show some recovery, the medium-term upside potential is limited.



The recent historical development of the industry helps to put into perspective the changes which have occurred.

While the Appendix describes other characteristics of the industry in some detail, two characteristics should be noted here. First, producers are not homogeneous. At the one extreme are those which concentrate on one particular segment — exploration, mining, smelting or fabrication. At the other extreme are those producers which are highly vertically integrated. There are, of course, many in-between. The relevance of this characteristic is that the motivation and financial position of producers can vary greatly depending on the type and location of their business. There are no useful labels such as "Seven Sisters" or "The General".

Second, different areas of the industry work on different time periods. For example, in exploration it can be 10-20 years, in mine development it can be 5-10 years, for cost accountants in the industry it can be one year, and for trading markets it can be within the day.

A 40-year perspective

For this purpose the period since World War II falls conveniently into two periods — the 30 years up to the early 1970s, and from then to the present.

The first period was characterized by sustained economic growth and a widespread expectation that growth would continue. This growth brought a strong increase in the demand for raw materials in the industrial economies. Japan, in particular, expanded rapidly to become a major manufacturing and trading power.

From around 1970 public opinion in the advanced nations was influenced by the "Club of Rome" debates which resurrected ancient fears about shortages of resources. Pessimists argued that future world growth would be limited by the available supplies of commodities which were finite, diminishing and non-renewable — shades of the forecasters in the United Kingdom who, for centuries, had been forecasting the exhaustion of coal reserves in that country! Those in the industry who knew better did not argue effectively against this fashionable wisdom of the time.

The belief in continued growth, together with fears of resource shortages, provided justification for a wave of expansion of mineral production. Multilateral aid agencies and commercial banks flush with OPEC surpluses from the first oil price shock provided ready funds for developing countries and others to open mines. The result was considerable investment in new capacity. When it came on stream, conditions had changed.

The last 10-15 years have been dominated by the consequent

adjustments in the world economy to the two oil price shocks. Initially the first oil price shock added to the psychological impact of perceived resource scarcity as the world economy grew rapidly in the early 1970s and the minerals industry prospered. It was widely believed that the slackening in both world growth and growth of metal demand in the mid-1970s was a cyclical phenomenon and that demand would soon revert to the long-run trend. Even in the late 1970s many published forecasts envisaged shortages occurring in the mid-1980s. These forecasts thereby encouraged another round of investment, especially in coal and aluminium smelting. Governments which cashed in on this shortage mentality by shaving off so-called "excess profits" in peak years, left the industry in poor shape to cope with the inevitable cyclical downturn.

The shake out in the early 1980s has forced a readjustment. The recent strong world economic recovery has seen no lift in metal prices denominated in US dollars and indeed prices continued to fall until recently.

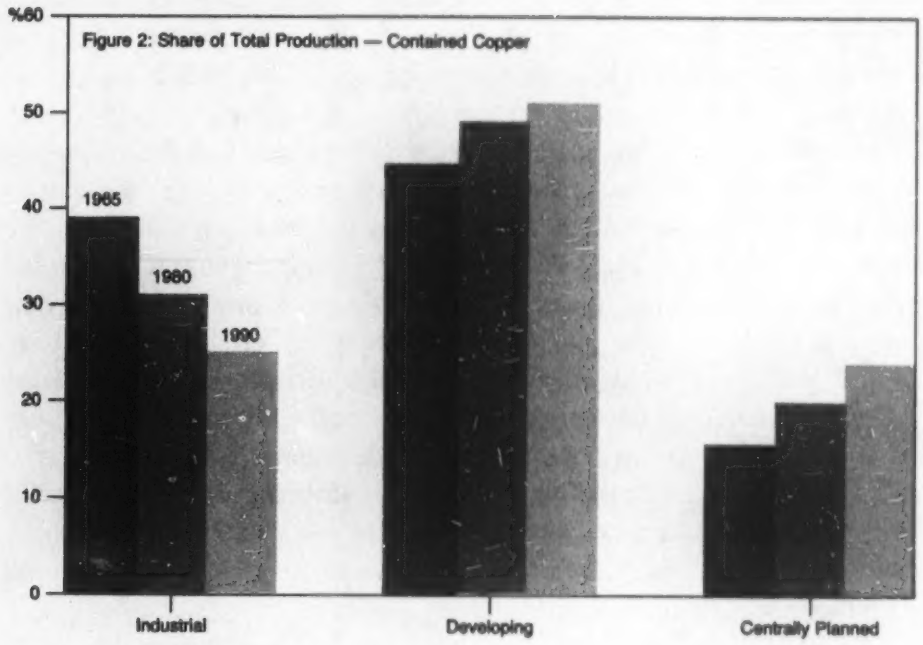
Resource industry attitudes to growth and investment have thus undergone radical change in recent years in response to important changes in minerals markets with lower growth in demand, excess capacity, poor prices and poor industry profits. Within this broad historical development, important changes have been underway in the industry's location, ownership and trade flows.

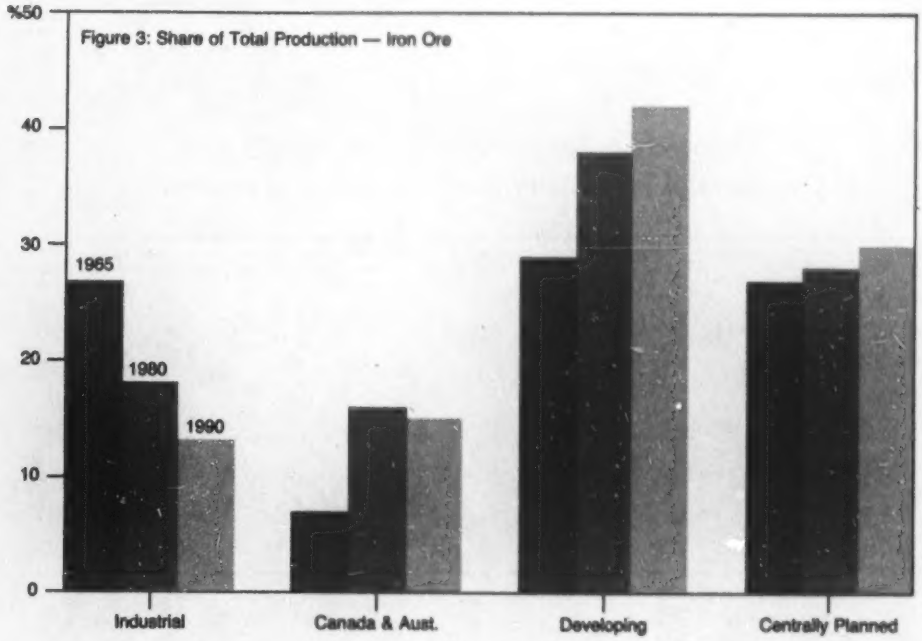
TABLE 1

Percentage shares in total mine production (tons of contained metal) by economic regions

	Actual						Projected		
	1965			1980			1995		
	I	D	CP	I	D	CP	I	D	CP
Copper	39	45	16	31	49	20	25	51	24
Lead	46	34	21	45	33	21	43	35	22
Zinc	57	27	16	50	28	22	51	29	20
Iron Ore	44	29	27	34	38	28	28	42	30
Bauxite	16	67	17	34	55	11	32	56	12
Nickel	70	9	21	47	30	23	40	37	22

I — Industrial economies
D — Developing economies
CP — Centrally planned economies
Source — Adapted from World Bank


%60
Figure 2: Share of Total Production — Contained Copper
50
40
30
20
10
0
1965
1980
1990
Industrial
Developing
Centrally Planned


%50
Figure 3: Share of Total Production — Iron Ore
40
30
20
10
0
1965
1980
1990
Industrial
Canada & Aust.
Developing
Centrally Planned

Mining

Mining is a small but important component of most major economies. The geographical location of the industry has been one of long-term continuous change as the higher grade deposits in the developed world are mined out, energy and transport costs change and new discoveries are made.

In the early part of this century, the United States grew to a dominant position in the industry which it is now beginning to relinquish. Europe has been a declining force compared with its position last century. The developing countries plus Canada and Australia are emerging as the main world producers.

Table 1 shows the actual and projected shares in total mine production for three economic regions. Figures 2 and 3 illustrate these trends for copper and iron ore.

The position of Canada and Australia is unusual. While both are developed countries with high living standards, both are mineral exporters competing in world markets particularly against lower wage rate developing countries.

Smelting

Most countries have at least some mining. Fewer have a smelting industry. The United States, Europe and Japan retain their dominance of the smelting industry because of past investment and because they are the largest markets. However, as in mining, there has been a shift towards the developing countries. Table 2 provides an indication of this shift.

TABLE 2

Developing countries' share of western world metal production

	1960	1980
Copper	23	34
Aluminium	6	20
Zinc	14	23
Steel	11	24

About one third of Western world smelting capacity is now in developing countries. Developing countries wish to smelt their own concentrate output into metal for a number of reasons — to add value, secure market outlets, generate employment, earn foreign exchange, take advantage of the availability of competitive energy supplies and to reduce transport costs.

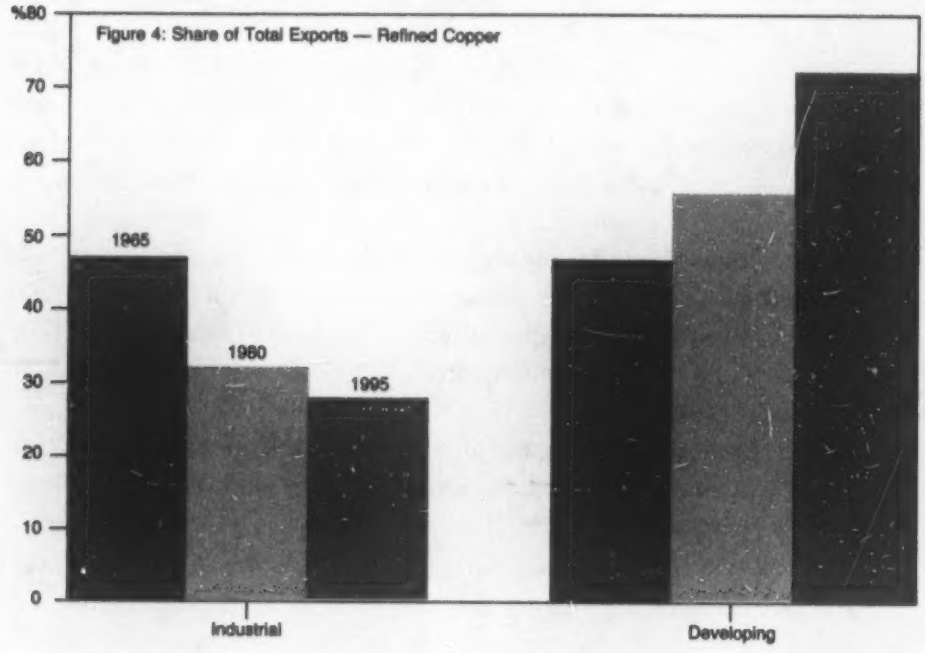


Figure 4: Share of Total Exports — Refined Copper

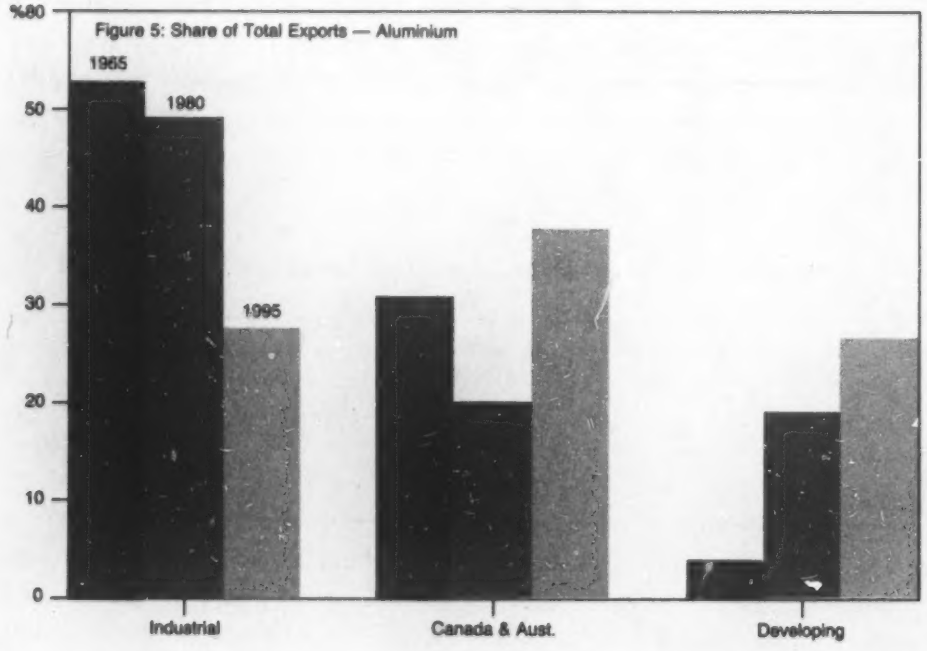


Figure 5: Share of Total Exports — Aluminium

International trade

As an example aluminium metal production moved towards the location of bauxite and alumina producers. This trend was accelerated by sharp increases in energy costs in the 1970s which was a factor contributing to the closure of a significant part of primary aluminium capacity in Japan. Some reductions in production also occurred in Europe and the United States. Expansion took place in Australasia, Latin America, the Middle East and Canada with new entrants making the industry more fragmented.

World trade in concentrates and primary metals is relatively small and is growing at a slower rate than total world trade. Most mineral output is consumed domestically. Non-oil mineral commodities comprised about 8 percent of world trade in 1983 compared to about 11 percent a decade earlier. Trade flows vary among different minerals. More than half of Western world iron ore production and 45 percent of refined copper production are traded internationally compared with only about 30 percent of refined lead production. The value of world trade in iron ore, aluminium (including bauxite and alumina), copper, zinc and lead was about $US20 billion in 1984.

As is the case with the production base, the export base is also shifting to developing countries. This is shown in Table 3 which lists the actual and projected shares in total minerals exports for industrial and developing countries. (The percentages do not add up to 100 because centrally planned economies are not included.) Figures 4 and 5 illustrate these trends for refined copper and aluminium metal with the importance of Canada and Australia highlighted in the latter.

The direction of these trade flows varies. Trade in copper ore and metal, for instance, is mainly from developing to developed countries. Developing countries, which produce about half the world's copper, export 80 percent of their production because of low domestic consumption. By contrast, aluminium metal trade is mainly among developed countries reflecting the location of processing facilities and final demand. Iron ore trade is mixed, with the major exporters being Australia, Brazil and Canada and the major importers, the developed countries.

TABLE 3

Percentage shares in total export volume of ores and metals by economic region

	Actual				Projected	
	1965		1980		1995	
	I	D	I	D	I	D
Copper	47	47	32	56	28	72
Lead	44	43	74	25	71	24
Zinc	61	25	78	17	70	24
Iron Ore	42	47	43	47	34	51
Bauxite	5	92	22	76	23	69
Alumina	27	66	60	36	59	37
Aluminium	84	4	69	19	61	27
Tin	22	78	11	89	10	90
Nickel	92	8	69	23	63	28

I — Industrial economies
D — Developing economies
Source: Adapted from World Bank

TABLE 4

Estimated western world supply under government control (%) in 1982

	Mining	Smelting
Developed countries		
Aluminium	3	16
Copper	2	2
Lead	6	6
Zinc	4	9
Developing countries		
Aluminium	40	6
Copper	39	30
Lead	13	12
Zinc	12	5

Ownership and control

One of the most important influences on the industry over the last thirty years has been the diffusion of political and economic power away from Western Europe and North America and towards Japan and East Asia.

A wave of nationalizations from the mid-1960s increased state ownership in the industry. Table 4 shows the importance of state ownership in the mining and smelting of various metals. While it is much higher in developing countries, the existence of state ownership in developed countries should not be ignored. Copper is the most highly controlled with about 70 percent of developing countries' mine capacity effectively controlled by governments. The main effect has been a diffusion of market power and a blurring of business and political objectives.

One result of this assumption of investment and marketing decisions by governments has been that the industry has become more fragmented and price leadership has been weakened significantly. The six large vertically integrated companies which dominated the aluminium industry twenty years ago have changed from price makers via the Alcan list price to price takers on the LME or COMEX terminal markets.

Even when governments have not chosen to own a mine or a smelting facility their control has been increasing in other ways. These have included taxation and royalty policies and the control of infrastructure in the mining community. The remote location of many mines can result in much more Government involvement in the industry. Where towns are established solely to serve the mine a decision to scale back or close the mine can have a much more concentrated social and political effect than, say, the shutdown of a manufacturing plant in a large city.

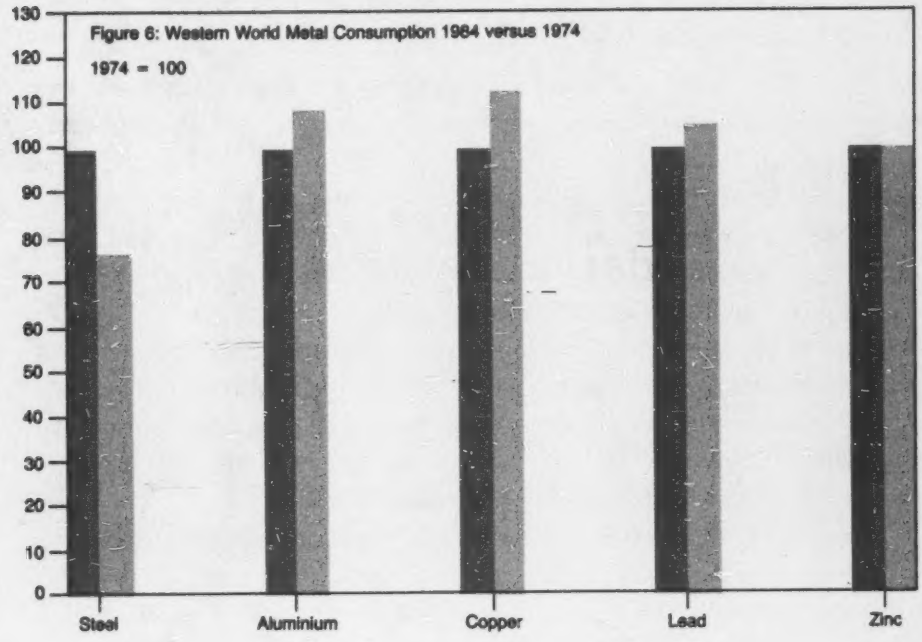


Figure 6: Western World Metal Consumption 1984 versus 1974
1974 = 100
130
120
110
100
90
80
70
60
50
40
30
20
10
0
Steel
Aluminium
Copper
Lead
Zinc

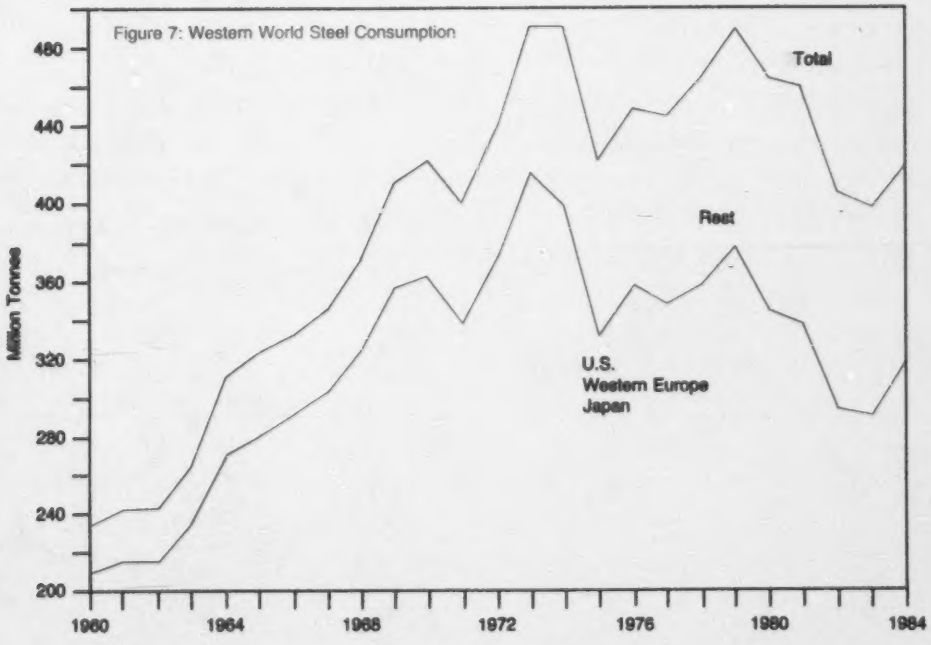


Figure 7: Western World Steel Consumption
Million Tonnes
480
440
400
360
320
280
240
200
1960
1964
1968
1972
1976
1980
1984
Total
Rest
U.S.
Western Europe
Japan

The fundamental forces at work

Falling demand

Rates of growth of demand for the main non-ferrous metals roughly halved in the 1970s compared with the 1960s. Demand fell considerably, but by varying amounts, in the 1979-82 downturn. While there has been some demand growth in the recovery since then, it has been from a low base.

Figure 6 shows Western world consumption of the major metals in 1984 compared with 1974. The starkest change has been in steel where consumption in 1984 was 20 percent below the 1974 level. This is shown in more detail in Figure 7. The big fall in consumption in Western Europe, Japan and the United States has been only partially offset by the rise in those developing countries where economic growth has continued.

Seven main longer-term reasons for this fall in demand stand out:

(i) Slower economic growth

OECD countries faced a severe cyclical downturn in the 1980-82 period. Looking at the broader trend, the growth rates were low when compared with the average of the 1970s, which was in turn well down on

TABLE 5

Changes in western world metal consumption

	% per annum		
	1960s	1970s	1979-84
Aluminium	9.3	4.6	1.0
Copper	4.3	2.3	0
Lead	3.4	1.2	−1.6
Nickel	7.0	3.4	−1.3
Tin	1.4	−0.2	−3.2
Zinc	5.1	1.4	−1.0
Steel	5.8	1.0	−3.2

the 1960s. Table 6 shows this trend as well as growth rates for the Pacific Basin and Latin American countries for comparison.

(ii) A tonne of metal now does more work

Worldwide the trend is towards the manufacture of lighter, thinner and stronger products. This trend is a reflection of technological developments in new and improved products accelerated by the perception of resource scarcity and changes in relative prices. High performance new sheet steels used today are around three times the strength of steels used ten years ago. This trend is driving investment towards the finishing end of the production cycle and competition based on quality is increasing at this end of the market.

(iii) Metals face substitution

Substitution is not new but rather should be viewed as a continuation of a long-term trend. However it was stimulated by the two oil price shocks and by the perception of continuing price rises in metals.

Substitution can be of two types. The first is inter-metal substitution such as aluminium for copper in vehicle radiators. The energy price rises emphasized lightness as one means of saving energy which led to changes in the use of individual metals. The second type of substitution is external substitution where, for example, plastics and ceramics are replacing metals, or where optical fibres are replacing copper in telecommunications.

(iv) Metal intensity and the stage of development

In the broadest sense use of metals is a function of incomes per head. At the first stage of economic development, say with *per capita* income less than $300, priorities emphasize expenditures on food, clothing and shelter. At this stage very little metal is consumed. But, at a certain "take-off" stage, characterized by rising *per capita* incomes, the usage of metals — or metal intensity — rises very rapidly. Then comes a further stage, say where *per*

TABLE 6

Average annual compound growth rates of real GNP

	1960s	1970s	1979-84
U.S.A.	5.0	3.5	2.4
Europe	5.3	3.3	1.2
Japan	15.0	6.8	4.5
Pacific Basin	8.2	10.8	6.2
Latin America	6.4	6.3	0.9

capita incomes are $5,000 or more, where the demand for metals grows more slowly. As an economy matures more and more of the rising incomes are spent on services.

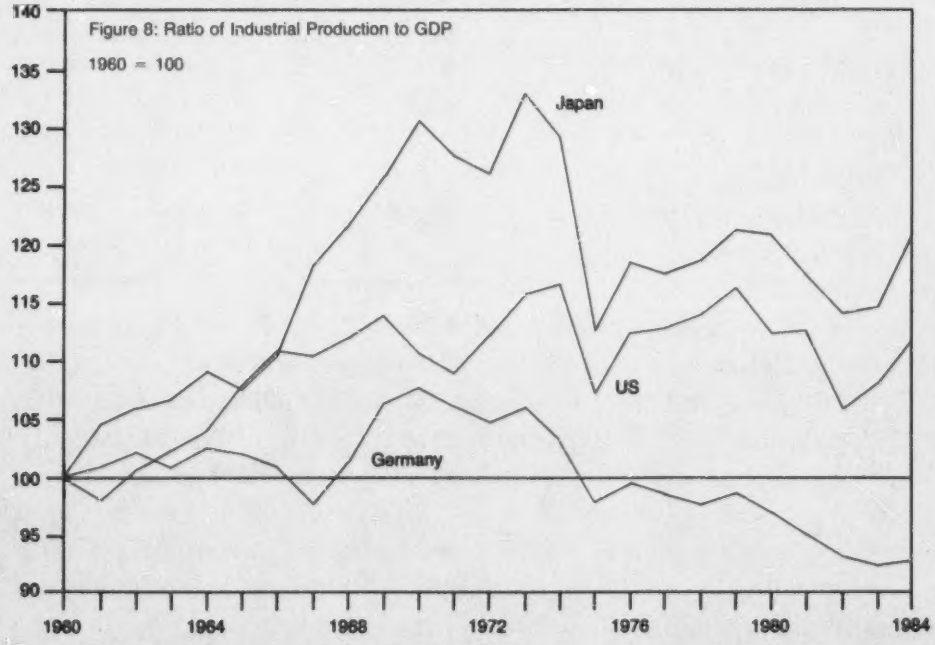
Metal intensity measurement depends on many factors such as *per capita* income, demographic factors, industry structure, technological developments, relative prices and resource endowments. In recent years it has become a very popular way of explaining changes in metal consumption.

The decline in developed countries' intensity of use is by no means a recent trend. For example, it has been happening for over 30 years in copper consumption in the United States.

(v) Changed industry structure

As the economies of the developed countries mature, dramatic changes take place in the location, structure and relative importance of the manufacturing and service sectors. Metal use is heaviest in the manufacturing sector e.g. the main determinant of demand for copper, iron and steel, and zinc is capital investment; lead is mainly used in transport, aluminium in construction and packaging.

In recent years, the metal-intensive manufacturing sector has contracted while the less metal-intensive services sector has expanded to a dominating position in most developed economies. Those areas of manufacturing that have been expanding tend to be in high technology,



which does not use as much metal as traditional manufacturing industries. The metals industry has suffered because its major customers have suffered.

There are two important results from this maturing process. The first is that the importance of the United States, Europe and Japan as centers of manufacturing has fallen in the 1970s. An indication of this is given in Figure 8 which shows industrial production as a proportion of GDP over the last 25 years. Over the period 1980 to 1984 industrial production for all OECD countries rose 6.5 percent compared with a rise of nearly 9 percent in GDP. Within this overall picture, over the same period industrial production in OECD Europe, a high metals importer, rose less than 1 percent whereas it rose 11 percent in the United States which is a large domestic metals producer. Apart from the shift to demand for services, other factors such as competition from imports, falling domestic demand, high wage costs, low investment, and environmental pressures have all contributed to the slower growth in industrial production in these countries.

The second result of the maturing process is that the importance of capital investment is falling in developed countries. This is partly a reflection of the fall in the dominance of manufacturing as well as the shift in public expenditure towards consumption at the cost of investment. Table 7 shows these trends.

TABLE 7

OECD growth rates; percent change in real terms

	1960-68	1968-73	1973-79	1979-83
Industrial production	6.3	5.5	2.1	−0.4
Gross fixed capital formation	6.5	5.9	1.1	−0.3
of which				
Residential construction	5.7	6.5	−0.8	−2.5
Non-residential construction	6.5	3.9	0.1	−0.8
Machinery and equipment	7.3	7.6	3.0	1.2

These trends were exacerbated in 1983-85 due to the strength of the US dollar. Between 1980 and 1985 the US share of world trade in manufactures fell from 13 percent to 9 percent. Canada, Japan and the Asian NICs (Taiwan, South Korea, Hong Kong and Singapore) were the main beneficiaries, but, on a smaller scale, other developing nations also benefitted in the more basic end of the product range. US manufacturing industry found itself in a similar position to many miners — battening down the hatches for survival with the focus on cost cutting, reducing employment and reassessing the future.

(vi) Developing countries' demand restrained

The developed nations of North America, Europe and Japan dominate world metal consumption. Since demand in these countries is static or falling, an increase in global demand requires new markets. Such new markets can come either from new uses of metal, or from developing countries reaching the "take-off" stage where metal intensity rises rapidly.

Few new developing markets, where metal demand is significant and rising, have emerged. The growth of the Asian NICs has been impressive but together they are relatively small consumers. Their increase has not taken up the slack from developed countries. The debt check to growth in Latin American countries has limited their contribution to growth in metal demand. Table 8 shows that despite strong growth rates in metal demand by developing countries, they still represent a relatively small share of the market.

TABLE 8

A comparison of market shares and metal demand

	Growth rates of demand 1960-82 (% p.a.)		Developing countries' share of consumption %	
	Developed Countries	Developing Countries	1960-62 Average	1980-82 Average
Aluminium	5.6	10.4	5.4	12.1
Copper	2.4	7.6	4.8	11.8
Lead	2.2	6.5	6.7	14.0
Zinc	2.0	7.4	7.5	18.6

(vii) Other factors

In addition to these longer-term effects on demand, the immediate past has been influenced by changed inventory practices. The emergence of positive real interest rates has increased the attractiveness of financial assets compared with tangible assets like metals. This, combined with better inventory control methods and lower price expectations in the past three years, has lessened the incentives for metals users to hold inventory-to- sales ratios at their 1960s and 1970s levels. The reduction in inventories is also occurring in the public sector. The US Government, for example, has reduced its strategic stockpiles as an austerity measure and further reductions are expected.

In theory, these inventory moves are once and for all and to the extent that they have occurred across various metals should have little or no further effect on demand. Also, if in the future the present excess supply situation is reversed, stocks could increase again.

Government policies, particularly in the environmental area, have also changed demand. The most notable case is lead, whose use is increasingly restricted, the most recent examples being petrol in Japan and Australia.

The supply side

The supply response has involved three elements:

— continuing additions to new capacity and a failure to shut existing high-cost capacity;

— the increasing importance of scrap as a competitor to new metal production; and

— the actions of individual producers to increase output despite the resulting adverse impact on total industry revenues and on the market.

The buoyant demand of the 1960s and early 1970s combined with forecasts of resource scarcity provided a large impetus to new investment in mining and metals capacity. The problem is that such investments have a long time lag between making the decision and producing the output. The investments did not come on stream until the late 1970s when the rate of growth of demand was falling. This expansion of new capacity has been helped by actions of governments, international agencies and banks which have effectively lowered entry barriers into the industry. This has been done through measures such as assistance provided to developing countries by international financial institutions and, within a country, government taxation concessions.

While entry barriers have been lowered, exit barriers have been raised. Governments and companies have been reluctant to close older or uneconomic capacity. Unions, communities and governments have supported measures to continue uneconomic operations driven by a desire to maintain employment and export income.

TABLE 9

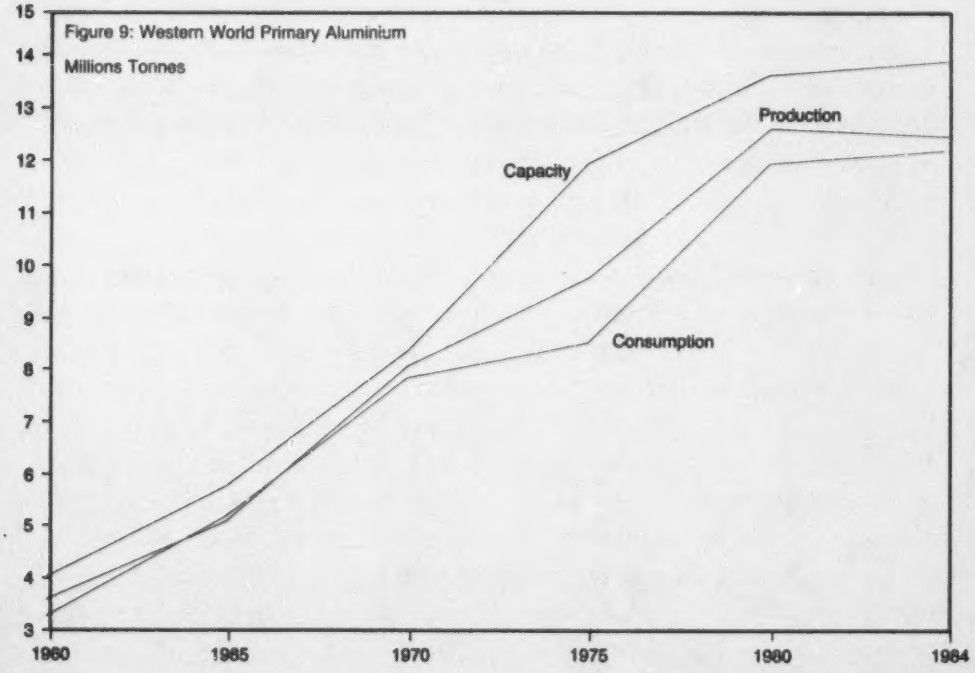
Estimated western world nominal capacity utilization in 1983

	(Production as % of capacity)	
Steel	(crude)	60
Aluminium	(smelter)	80
Copper	(mine)	77
	(smelter)	78
Lead	(mine)	78
	(smelter)	80
Zinc	(mine)	75
	(smelter)	80

The overall result of these capacity decisions has been relatively low capacity utilization rates, as shown in Table 9. It should be noted that the Table shows nominal utilization rates. These can overstate effective rates because they include capacity that is not operating and perhaps will never reopen. Alternatively, they can understate effective rates because new cost-cutting production techniques eg computer controls, in existing facilities, often permit production greater than nominal capacity levels. The cutbacks in production rates have not fallen evenly across countries. In almost all minerals and metals the United States has borne a much heavier burden than other countries.

The trends in supply and capacity utilization are illustrated in Figure 9 using the example of Western world primary aluminium. It shows the tight conditions in the 1960s, the large excess capacity in the 1970s due to producers thinking the 1960s growth rates would continue, and the adjustment in the 1980s of capacity and production to slower growth in consumption. Capacity utilization, which peaked at 96 percent in 1970, is now around 89 percent, though it fell to 72 percent in 1982.

Gold and silver are exceptions to this trend. While gold mine production was in steady decline throughout the 1970s, output has increased since 1980 due to new supplies from North and South America. Static silver mine production in the 1970s gave way to increased production in the early 1980s.



The second element in the supply story is that in recent years technological changes, increased energy costs and tightened environmental regulations (which differ markedly between nations) have greatly increased the importance of scrap or secondary metals in the total metal supply picture. For example, secondary recovery of lead now accounts for about 50 percent of refined lead consumption compared with about 30 percent in 1962. This percentage will continue to increase. For refined copper the current scrap usage rate is about 15 percent of consumption and is rising. While collection costs and the pool of scrap limit the substitution of secondary for primary metal to some extent, technological advances in refining secondary metal are likely to result in further increases in scrap usage.

The third consideration explaining this lagged supply response is that many individual producers expanded output as a result of their desire to cut costs. This occurred in two main ways: first, through selective mining of higher grade ore bodies where costs per unit of metal output are lower, which often raises total output; second, though the economies of scale with high fixed/low variable costs characteristic of the industry, which means that incremental additions to output are low cost and average cash costs fall as output expands. This pushes every individual producer to "try to sell a bit more" into an already oversupplied market.

The distinction between cash costs and fixed costs is important in determining mine supply. As mines compete with each other on the basis of cash operating costs (in the short-run, ongoing fixed costs have no bearing on whether a mine closes or keeps operating) there is a considerable incentive for marginal producers to lower cash costs and stay in business. This has been the approach of marginal copper and aluminium producers in the United States where cash cost reductions of up to 30 percent have been achieved. The effect of these cost reductions is that marginal mines have delayed their exit, adding to the excess supply problem.

The desire of raw materials producing countries to get more value-added jobs from their resources, and the reluctance of consuming countries to relocate or restructure their own plants, have exacerbated the excess supply situation. Steel is perhaps the most obvious, but it is not an atypical example.

Much of this increased supply of minerals and metals came from developed countries produced by profit-seeking companies rather than state-owned enterprises in developing countries, the so-called "social" metal producers. The latter are criticized on allegations of failure to recognise damage to markets, access to cheaper sources of loan funds and/or less severe environmental standards. While this criticism may not

always be justified, some significant LDC debtor countries, which rely on minerals for a major part of their export income, have had to seek to boost that income by expanding output.

The inevitable result — depressed prices

The result of these fundamental changes in demand and supply has been a prolonged spell of inadequate metal prices. The persistence of larger than normal excess capacity for so long has broken the previous close link between prices and costs. When supply and demand were broadly balanced, average prices tended to exceed costs for most producers. In recent years average prices have fallen below costs for many producers. This is also a reflection of the shift from producer pricing to terminal market pricing and is complicated by the impact of fluctuating exchange rates.

Some background on how prices are set is useful to understanding these price movements.

There are two main types of market pricing arrangements for mineral output. The first is where the ultimate metal produced is traded on a terminal market. The two major terminal markets are the London Metal Exchange (LME) and the Commodity Exchange of New York (COMEX). The latter services mostly North American trades and through arbitrage usually parallels LME pricing. These markets operate by a formal set of rules for daily price (both spot and forward) setting and cover non-ferrous metals such as copper, lead, zinc, nickel, aluminium and silver. Physical turnover on the LME is a very small proportion of world trade and the market is noted for its volatility.

Gold is an exception with prices set twice daily on the London bullion market. Again volumes traded are not large. This market provides a benchmark for other gold bullion markets and futures markets. Although traded on a terminal market, silver also has a London bullion market which is of equal importance with the LME in determining world prices.

Terminal markets mean that a producer is always able to find a buyer for the last tonne of metal at the price prevailing on the day. The refined metal price determined on the terminal market is used to determine pricing of intermediate products (e.g. concentrates) and ore, the lowest value product. For example, the miner usually receives the metal price for an agreed proportion of the metal content less a negotiated fee from the smelter. While the LME price serves as a benchmark for metal prices around the world, discounts or premiums will be received by miners depending on the regional balance between supply and demand.

The second type of pricing arrangement is where prices are set

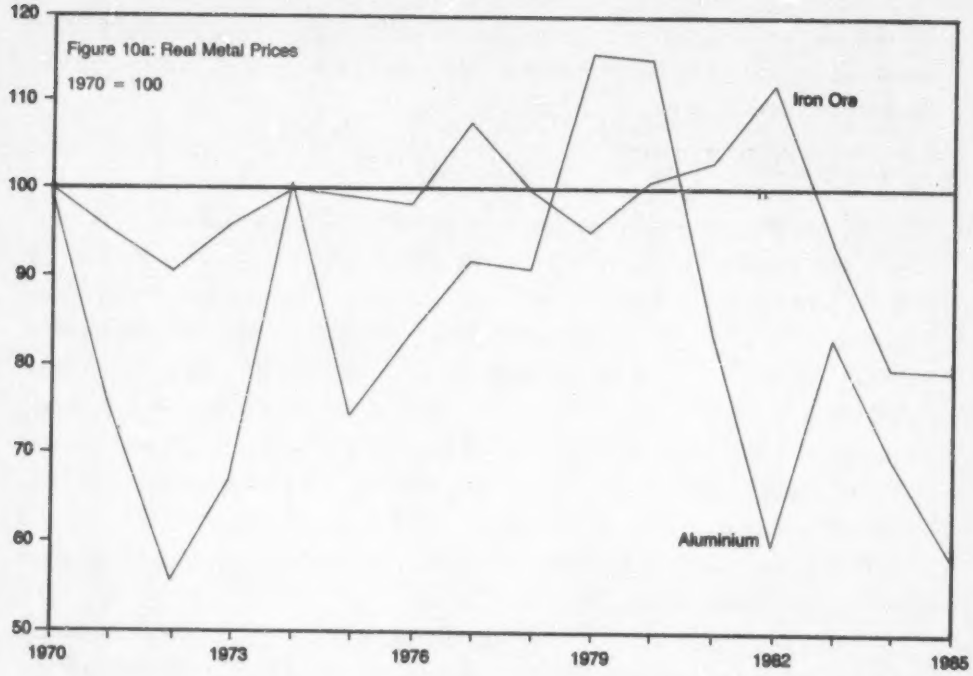


Figure 10a: Real Metal Prices
1970 = 100
Iron Ore
Aluminium
120
110
100
90
80
70
60
50
1970
1973
1976
1979
1982
1985

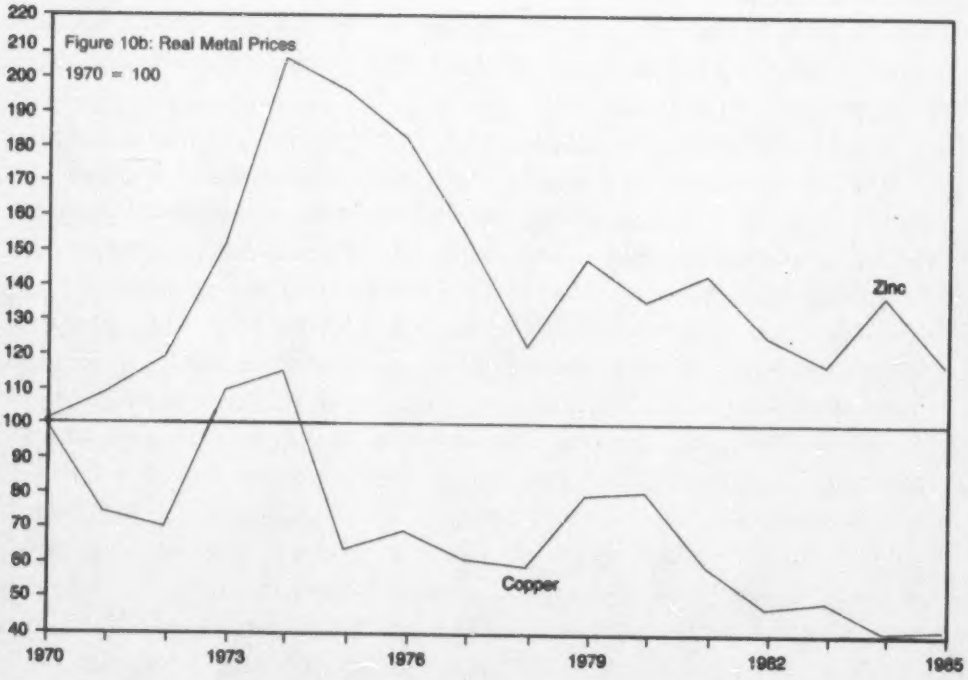


Figure 10b: Real Metal Prices
1970 = 100
Zinc
Copper
220
210
200
190
180
170
160
150
140
130
120
110
100
90
80
70
60
50
40
1970
1973
1976
1979
1982
1985

through periodic price renegotiation of long-term supply contracts ruling between individual buyers and sellers. An example is iron ore.

As shown earlier in Figure 1, the IMF US dollar metal price index (which covers copper, iron ore, tin, aluminium, zinc, nickel and lead) has fallen significantly in the last five years. Within this general trend the prices of some metals have fallen dramatically. This is shown in Figures 10a and 10b which plot price trends for major metals since 1970 expressed in United States dollars in real terms. The figures show the general trend of constant or falling real prices, particularly in the last five years. The only exceptions were the aberrations in zinc in the early 1970s (and the subsequent permanent loss of market share) and lead, silver and gold in the late 1970s. The major casualties have been copper, aluminium and lead. In the 1970-84 period, real copper prices fell 60 percent; in the 1980-84 period real lead prices fell 60 percent and real aluminium prices fell 40 percent. Lead and aluminium prices are now close to their lowest ever in real terms.

Prices of mining products which are not traded on terminal markets have exhibited less volatility, although prices have fallen in real terms in recent years. For example, real iron ore prices are now about 20 percent below their 1970 level.

The strengthening of the US dollar against other currencies had a depressing effect on US dollar denominated prices. This was particularly so for gold and silver where, for some time, US dollar price reductions matched US dollar appreciation. Another effect of the appreciating US dollar was to distort prices in the local currencies of producers and consumers. The increasing dominance of the US financial and commodity markets has emphasized the importance of US dollar pricing. This is shown in Figures 11(a) and 11(b) where copper prices are used to illustrate the different perceptions of prices to consumers or producers depending upon the currency used. While consumers in the United States enjoyed historically low real prices, those in West Germany and the United Kingdom faced the opposite. Producers in developing countries with devaluing currencies have benefitted. United States producers, up to February 1985, were squeezed by cheaper imports and the overstrong dollar.

There have been sporadic and generally unsuccessful attempts to form producer associations to avoid the worst of price fluctuations. These attempts were increased in the 1970s after the initial success of OPEC. Examples include CIPEC for copper producers, the International Bauxite Association and the International Tin Council. Reasons for the failure of such schemes have included: a confusion of objectives on pricing with many confusing price stability with price maximization; inadequate control

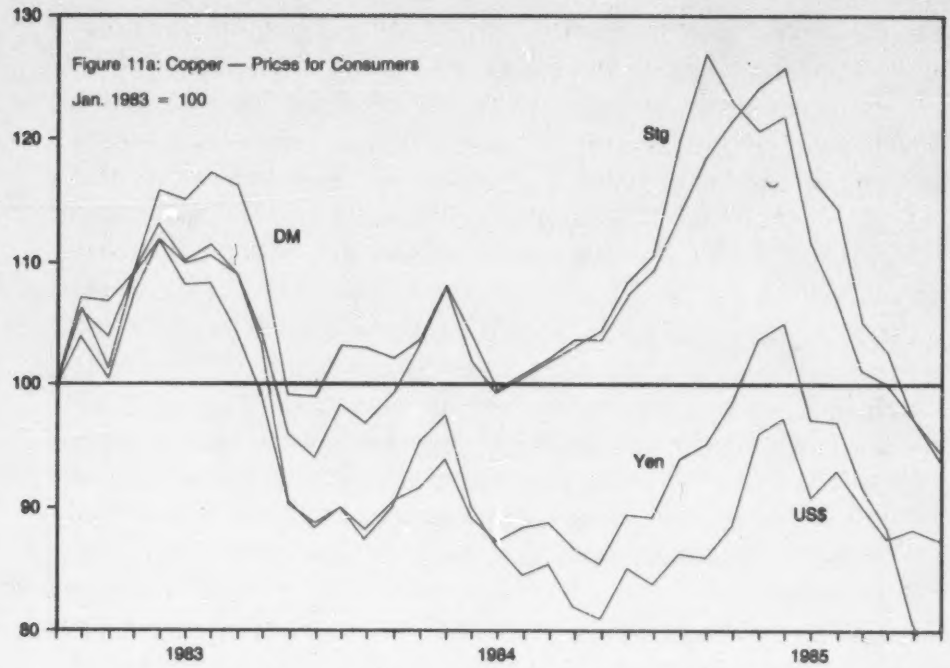


Figure 11a: Copper — Prices for Consumers
Jan. 1983 = 100
130
120
110
100
90
80
Stg
DM
Yen
US$
1983
1984
1985

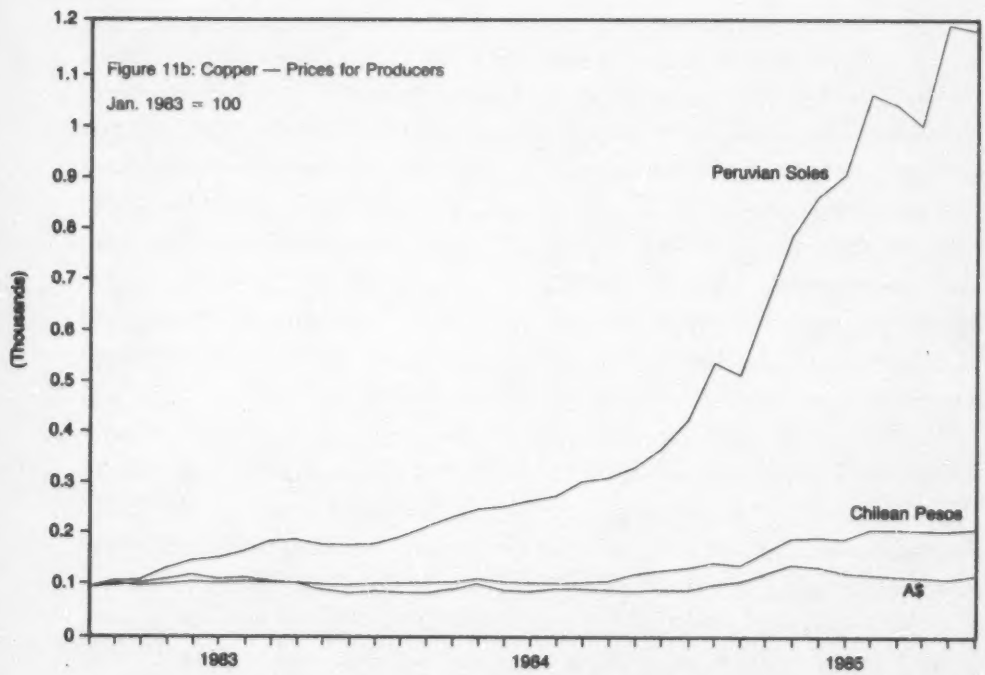


Figure 11b: Copper — Prices for Producers
Jan. 1983 = 100
(Thousands)
1.2
1.1
1
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
Peruvian Soles
Chilean Pesos
A$
1983
1984
1985

of a sufficient share of world supply; an unwillingness to cut output in times of over production; and opposition on antitrust grounds, particularly from the US government. Even in the case of tin, the ITC, arguably the most successful producer association, was unable to continue its price support campaign. Continual buying since about 1981 eventually exhausted the financial resources of the ITC and led to the suspension of tin trading on the LME in October 1985. In the end, markets, not cartels, have been shown to work.

More speculation; a problem?

LME prices are understandably very sensitive to changes in supply and demand, whether real or speculative, and the publication of weekly inventory figures increases the exposure of the industry. As is the case with foreign exchange and bond markets, commodity market investors, speculators and intermediaries have a short-term orientation.

Further, speculators not only trade metals, but bonds, currencies and other commodities as well as switching back and forth. In recent years speculators have moved out of metals and into financial assets which has depressed metal prices. Speculators tend to be interested only in "long" positions, i.e. they enter the market when they expect prices to rise and exit when they expect prices to fall. The possibility of protracted supply surpluses has thus lessened the attractiveness of metals to speculators. One measure of this is the decline in the volume of metal futures contracts traded on US exchanges.

The impact of the speculative sector of the LME market can be judged by the ratio of LME turnover (physical and paper) to Western world production. In 1984 the ratio was 6 for copper, 3 for lead and 2.5 for aluminium. Specialist commodity funds have added significant volumes to these speculative markets. For example, between 1979 and 1984, LME turnover increased 600 percent for copper and lead, 800 percent for zinc and 2,600 percent for aluminium (where the figure is inflated by the introduction of a new aluminium contract).

This is not to denigrate the important role of free markets or speculators within these markets. Rather it is that the role and effect of speculation has changed. Producers and consumers have long been involved in hedging to protect against changing fundamentals and to ensure a known return. This was a stabilizing form of speculation generally undertaken by industry participants. The speculation in recent years has been much larger and driven more by financial motives. This has possibly been more destabilizing to prices and thus complicates the management task of producers.

High debt levels and poor profit performance

Investment in industry projects frequently requires large amounts of capital, often without a return for several years. The expansion of existing facilities in the 1970s resulted in many mineral and metal producers absorbing a large amount of debt in their capital structure.

Debt/equity (total debt/shareholders' funds plus deferred tax) ratios in the aluminium industry range from 0.5 to 0.9 with liquidity (measured by the current ratio) generally exceeding 1.5. While the major aluminium producers have a relatively strong financial position this is not true for all in the base metal industry. For example, debt/equity ratios vary from 0.2 to 1.2 with liquidity close to one for some of the highly leveraged companies. Steel is worse than most industries with debt exceeding equity by a factor of two in some cases.

Combine high capital requirements, high debt levels and record real interest rates with the trends in demand, supply and price outlined and it is perhaps not surprising that the mining industry has had a somewhat indifferent financial performance since 1970.

Generally, return on equity in the industry has been inferior to and more volatile than many other shares listed on the stockmarket. Since 1980 returns have fallen disastrously, as indicated in Figure 12, which shows the unweighted average figures for major firms operating over the period. In the

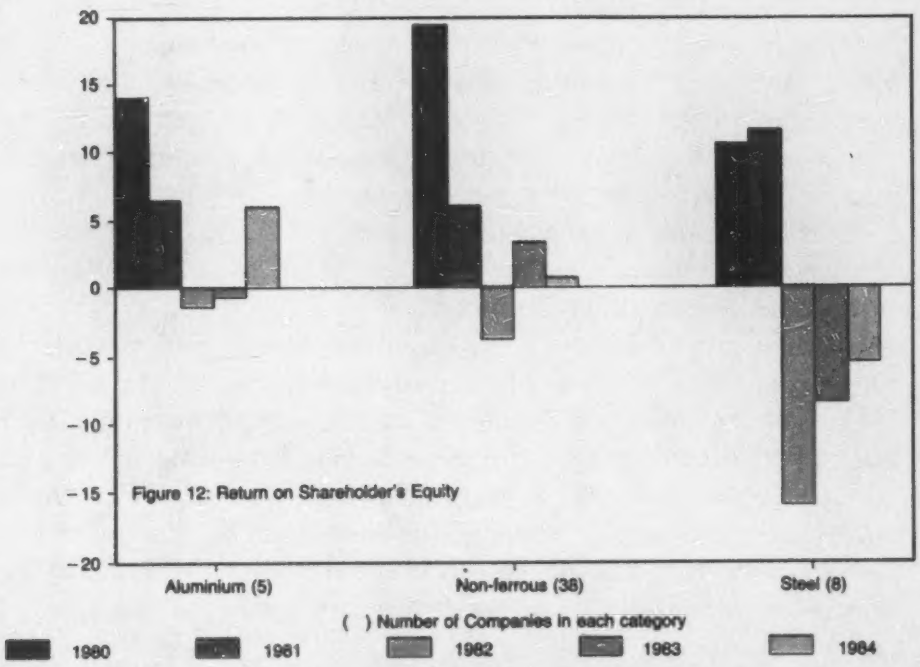


Figure 12: Return on Shareholder's Equity

aluminium industry return on shareholders equity for the major integrated producers declined from 15.2 percent in 1980 to 7.2 percent in 1984. Major non-ferrous metal producers experienced average rates of return of 18.2 percent in 1980, down to 2.5 percent in 1984. Steel presents an even gloomier picture with return on equity dropping from 11 percent in 1980 to −5 percent in 1984 with negative returns over the last three consecutive years. This record has severely threatened the existence of some companies.

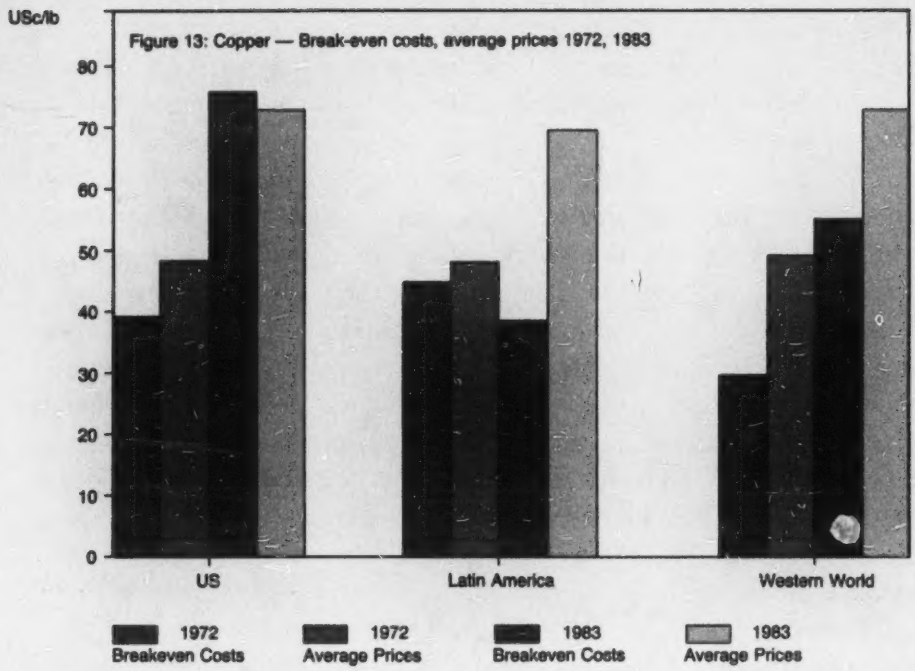
The industry's response

The changes described so far have provided, and will continue to provide, pressures for considerable structural adjustment in the industry.

Many industries are forced to go through structural adjustment when the market conditions they face change. However, the mining industry often feels the brunt of this adjustment more directly than other industries. In contrast to mining, the differentiated products of manufacturing and service industries are, to varying degrees, artificially insulated from worldwide competition. The existence of terminal markets also introduces a volatility that some sections of manufacturing do not face. Generally the growing services sector is competitive only within a country and relatively little is traded. Mining and metals companies, however, sell undifferentiated commodities into a world market. They have to be internationally cost competitive and efficient at adjusting. If not, they feel the cold shower very quickly, as a lot of them have in the last decade.

In structural adjustment the scope of industry response is extremely limited and must inevitably concentrate on cost reduction and closure of facilities. This has in fact occurred — in many mineral industries cost curves have shifted downwards by between 10 percent and 30 percent over the past three years. Cost cutting and improving productivity have taken a number of forms. These included changes in long-established labor work patterns which have brought significant increases in productivity and short-term responses which defer costs from the present to the future. Examples of the latter have included high grading, deferring maintenance and postponing development of future mineable reserves.

Operators in many countries have looked to government for help. One area of relief has been reducing government royalties and charges to help lower costs. A reduction in charges is particularly important where the government is a monopoly supplier of a service such as electricity or transport. Another approach is to seek government assistance to ease the



adjustment pains, particularly where hardship is due to factors such as exchange rates which are beyond the industry's control.

Where cost cutting and government help are not enough, the industry has to make changes in operational and investment plans. This can mean mothballing or closure of mines and smelting facilities.

As mentioned above, producers in the United States have been particularly affected. Mines there tend to be low grade, relatively high cost and, whilst the dollar was so strong, they faced the brunt of import competition. Further, the industry has often been unable to invest in modern equipment, has high labor costs and the added burden of tight environmental regulations.

Probably worst affected in the current setback has been copper. The industry's changing fortunes are shown in Figure 13 which compares break-even costs and average prices. In 1972 the US industry was in a relatively good position with a profit margin above Latin America but below the Western world average. The situation had changed dramatically by 1983 — with US producers making a loss and Latin American producers achieving a large profit margin. This situation has deteriorated since 1983 with prices averaging 65-70 US cents per pound in 1985. Dramatic cost cutting has helped somewhat in the mining companies which have survived.

Some have not survived. This is particularly so for the subsidiaries of

oil companies which diversified into mining, particularly copper, in the 1970s. The exit of these oil companies now is almost as quick as their entry as they cut their losses and leave — sometimes without recovering initial entry costs.

US copper industry output was about 1 million tonnes in 1984, down by one-third since 1981 and it is expected to fall further. Production is now about 20 percent of western world production compared with nearly 40 percent in 1971. The United States is becoming a marginal producer.

Across all minerals this forced adjustment has had a number of important effects. The industry has contracted, leaving the low-cost operators and those producers, mainly state owned or controlled, which continue to produce for foreign exchange or employment reasons. Effective operating capacity has been reduced to well below nominal capacity in most minerals and there has been a dramatic fall in new investment with very few new or expanded mines being opened, though gold is an exception to this trend in recent years.

Remaining producers are having to adjust to a changing financial environment. The rising price trend in the 1960s and 1970s plus the increased inflationary expectations of the 1970s meant that many companies were structured financially so that they would perform well with rising prices. Mining companies, given their capital intensity and risk profile, were prime examples of an inflation hedge. What was unexpected in the current recovery was that it has not been accompanied by a rise in inflation. Indeed, the average rate of inflation for the 21 largest industrial countries fell from 4.9 percent in 1983 to 4.1 percent in 1984 and fell further in 1985.

Deflation is a major risk for mining companies, particularly those with a high level of debt. Companies now have to adjust to an environment of relative price stability. Price stability and low profits concentrate the mind on cost reductions, productivity improvements and debt reduction. Inflation can no longer be relied upon to hide a multitude of sins.

The longer-term outlook

This paper has outlined an industry characterized by instability arising partly from the wasting assets which underpin it and partly by cyclical fluctuations in prices and demand. The result is a "boom and bust" image. For those involved in the industry — whether explorers, producers, consumers, financiers or governments — it is important to understand the following:

- In the 1970s entry barriers were uncommonly low and the industry is suffering as a consequence. All concerned should endeavour to ensure that new entry is undertaken only by the most competitive new producers and that this competitiveness is not the result of subsidized inputs or of prevailing industry fashion.
- Exit barriers have for many reasons been too high. It is in the interests of all parties that they be reduced.
- While in past cyclical downturns participants may have been able to weather the storm by transitory and short-term measures, these may not be sufficient in the present environment.
- The industry cannot rely on either rising prices or rapid growth in demand to overcome its present problems.
- There needs to be a much more selective approach to new investment. The evidence is that some suppliers, lenders and governments continue to live in the past — relying on the memory of years when there were steadily growing markets, and cheap energy and capital.

What, then, is the outlook for the industry over the next 5-10 years?

Forecasters would do well to recall Mark Twain's comment that the art of prophecy is a difficult one especially with respect to the future. The track record of forecasters in the minerals industry has not been good for many years. One major source of error in the short-term forecasts has been that

volatile markets respond more to expectations and sentiment than to the fundamentals of demand and supply. Over the longer term, on which this paper concentrates, the fundamentals are more important.

Mineral commodity markets over the next half decade seem likely to be influenced by modest economic growth in the industrialized and developing countries. The excessive stocks which depressed many minerals markets in 1983 and 1984 have been slowly reduced. New additions to supply capacity are limited. Some restructuring of the mining and smelting sectors has been undertaken but much more remains to be achieved. There are signs of a geographical relocation of some parts of the industry away from developed countries, towards the source of the minerals and/or the energy. The generally poor profit record of the industry is likely to slow new investment and deter new participants.

The speed of the adjustment process will be influenced by a number of variables. Some of these are:

- the rate of economic growth in the industrialized world and the timing of the next cyclical downturn;
- the relative performance of the goods producing sectors within the industrialized economies;
- the rate of growth of world trade and the ability of governments to resist protectionist measures;
- a satisfactory resolution of the LDC debt problem;
- the pace of the unwinding of the US-driven phenomenon of high real interest rates and an overvalued dollar;
- the pace of innovation and any abnormal technological change;
- the development of centrally planned economies and their trading relationships with the West.

It would be wrong to conclude this analysis on a totally gloomy note. The experiences of the minerals industry over the past five years or so have been tough. It takes time to adjust. The starting point in some minerals might be more exacting tests on new investment in the industry. Eventually the geographical shifts — from the old world to the new — will accelerate and growing demand will emerge, perhaps initially in Asia as per capita incomes rise. Just as the buoyant conditions of the late 1960s and early 1970s were unsustainably good, so the present depressed conditions cannot continue. The industry is not going to die: it is going to change significantly.

APPENDIX

Some industry characteristics

There are at least four distinct, and largely self-contained, segments of the industry.

1. Exploration

The mining industry is different from most other industries because each mine is dealing with finite, non-renewable resources. Since a mine is a wasting asset, the end is always in sight. Hence exploration is an integral part of the industry. But exploration is a high risk, high cost business with a long lead time. While geological expertise and adequate funding are essential, they are often secondary to luck. Given this risk and the generally low returns to mining over the last decade, why do companies continue to explore? There are two reasons. First, producers planning to stay in the business need to replace ore reserves depleted by mining. The larger mining companies fall into this category and most maintain a relatively steady level of exploration expenditure. Second, explorationists tend to be optimists driven by the hope of finding a particularly rich deposit which can be mined at low cost, i.e. a bonanza.

In the last fifteen years exploration activity has been concentrated in Australia, the United States and Canada. Mineral exploration expenditure in developed countries has been consistently higher than in developing countries for many years. In the latter category Brazil has attracted the greatest level of expenditure.

While exploration expenditure has increased in real terms during the last fifteen years, two major cycles are recognisable since 1961. The first peaked in 1970, while the second reached a high in the 1979/80 period. The troughs of the cycles coincide with the economic recessions in 1974/75 and 1981/82.

The impact of government policy on exploration, both through access

to land and the fiscal regime imposed on explorers, is becoming increasingly important. Another factor is the actual or threatened imposition of additional taxes to skim off profits. Such taxes provide perverse incentives by biasing investors against potentially higher return projects, and mean that investors in the industry require a higher average long-term rate of return on their investment in exploration.

2. Mining and concentrating

The mining process involves the extraction of ore, i.e. a concentrated form of mineralization. Minerals frequently occur in nature in combination rather than separately e.g. silver, lead and zinc are often found together, as are copper and gold. Such metals must be mined together. For near-surface orebodies large open pits are the most common method of extraction. The open pit style of mining permits the achievement of relatively low unit cost. This mining method is generally applicable to iron ore mining, low grade copper mining, and bauxite production.

Underground mining is generally undertaken when ore bodies are too deep for economic open pit extraction. Because of the generally smaller scale of underground mines, unit costs may be higher than open pit mines, depending on the amount of metal contained in the ore.

Ore from the mine is usually crushed and concentrated to produce a mineral concentrate. Because of the high transport cost per unit of contained metal most concentrators are usually located at the site of mining. Base metal mines, in which several ore minerals may occur, generally produce more than one type of concentrate. (For example, some base metal mines produce separate concentrates for copper, zinc and lead.)

Concentration is not always required. In the case of iron ore, the mined ore is frequently shipped directly. But with declining iron contents of many ores, a concentrating stage is now more common. The stages in the conversion of bauxite to aluminium are slightly different. Bauxite is refined to alumina, a process more akin to the production of a concentrate suitable for smelting. As a general rule the lower the grade of ore, the greater the need for mineral concentration.

The output of most mines is bulky and sells for a relatively low price per tonne. This means that geography and transport costs to markets are key features of competitiveness. In contrast to the last century when mines tended to be high grade, current operations usually involve the movement of large tonnages of lower grade ore. This requires capital intensive, large scale mining methods.

This capital intensity is relatively high when compared with other

industries. The capital/labor ratio has also increased in recent years as the smaller rich underground mines have worked out and replaced by lower grade open cut mines. The industry generally has high fixed costs and low variable costs. These economic characteristics heavily influence the pattern of supply.

The competitiveness of individual mines varies widely and is a function of factors such as ore grades, reserves, occurrence of co-products and mining methods (open cut or underground). Mines in developing countries gain from relatively low wages and may also gain as exporters with devaluing currencies.

The shift to lower grades has forced the industry to improve its technical methods. This emphasis on technological innovation has contributed to a good productivity growth record in recent decades. The bulk of these gains have been either passed on to buyers through competition (largely because products are undifferentiated) or, in some cases, appropriated by governments.

3. Smelting and refining

Smelting and refining usually occur at a site geographically distant from the mine. Smelting generally requires the addition of electrical or chemical energy to break down the mineral and release the metal. The liberated metal commonly contains trace amounts of other metals that have to be extracted in a refining stage. The steps in the smelting and refining process vary between different metals.

Copper smelting produces copper blister and matte as products, which may be refined at the site of smelting or exported. Similarly, iron ore is smelted to pig iron in a blast furnace before refining, in an oxygen or electric furnace, to steel. In the case of lead and zinc, smelting and refining occur at the same site without the production of a tradeable intermediate product.

In all cases, the high energy intensity of smelting and refining has resulted in the growing trend to locate these activities near sources of energy.

The refined metal output usually represents the end of the producers' role. However, with integration of some producers into metal semi-fabrication, particularly in the case of aluminium, this distinction often becomes blurred.

The competitiveness of individual smelters is a function of factors such as location costs, energy costs, raw material costs and the technology employed.

Capital intensity is also high in smelting with again a strengthening

emphasis on technology. The driving forces for this have been the need to control costs and strict environmental regulations, particularly in developed countries.

4. Semi-fabrication and fabrication

Refined metal is sold to semi-fabricators who roll and form the metal into a number of saleable shapes. Heat-treatment and alloying are also undertaken at this stage to increase product quality.

The last stage in the cycle is the fabrication of final goods from the semi-fabricated metals.

In the case of most metals, a growing proportion of obsolete final goods is recycled as scrap and enters the process at the smelting and refining stage. Most of the waste from the semi-fabrication stages is also recycled.

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Address inquiries to:

The Group of Thirty
725 Park Avenue
New York, New York 10021
(212) 988-5544